DOCUMENT RESUME

ED 160 775 CE 017 540

AUTHOR Davis, Duane Lester
TITLE Analysis of Factors Related to Attitudes toward Supervised Occupational Experience Program Record Keeping among Agricultural Education Undergraduates at Iowa State University.
PUB DATE 78
NOTE 119p.; Master's Thesis, Iowa State University

EDRS PRICE MF-$0.83 Plus Postage. HC Not Available from EDRS.
DESCRIPTORS *Agricultural Education; Biographical Inventories; Higher Education; Masters Theses; Questionnaires; *Recordkeeping; Secondary Education; *Student Attitudes; *Supervised Farm Practice; Undergraduate Students; Vocational Agriculture; Work Experience Programs
IDENTIFIERS Iowa State University

ABSTRACT

The purpose of this study was to identify factors influencing the attitudes of former agricultural students who are preparing to be vocational agricultural teachers toward supervised occupational experience (SOE) program record keeping. Agricultural education majors at Iowa State University during winter quarter, 1978, who had vocational agriculture in high school served as the population. A stratified random sample of 100 students (98 responded) was drawn from this population. A two-part questionnaire was developed to collect biographical data about the respondents and to determine how important students thought their SOE program record keeping was in developing record keeping abilities. The findings revealed similarities and differences among groups of students. Three of the findings were that significant difference existed among mean ratings for students grouped according to the number of hours per month devoted to instruction and work on SOE records in developing some record keeping abilities; similarities existed among means of students grouped according to the number of instructor SOE visits received per year; and no significant difference was found among mean ratings of students grouped according to their financial net worth at the time of their high school graduation and their perceived importance of SOE program record keeping. (JH)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

Analysis of factors related to attitudes toward supervised occupational experience program record keeping among agricultural education undergraduates at Iowa State University

by

Duane Lester Davis

A Thesis Submitted to the
Graduate Faculty in Partial Fulfillment of
the Requirements for the Degree of
MASTER OF SCIENCE

Major: Agricultural Education

Approved:

David L. Williams
In Charge of Major Work

Harold R. Crawford
For the Major Department

M. J. Ulmer
For the Graduate College

Iowa State University
Ames, Iowa
1978

ED 160775

CE 017 540

U S DEPARTMENT OF HEALTH, EDUCATION & WELFARE
NATIONAL INSTITUTE OF EDUCATION

THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL NATIONAL INSTITUTE OF EDUCATION POSITION OR POLICY

"PERMISSION TO REPRODUCE THIS MATERIAL IN MICROFICHE ONLY HAS BEEN GRANTED BY

David L Williams

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC) AND USERS OF THE ERIC SYSTEM."

TABLE OF CONTENTS

	Page
INTRODUCTION	1
Purpose and Objectives	2
Significance of the Problem	4
Independent Variables	5
Dependent Variables	5
Definitions	7
REVIEW OF LITERATURE	8
Supervised Occupational Experience Through Vocational Agriculture	8
Supervised Occupational Experience Records in Vocational Agriculture Instruction	10
Student Benefits from Supervised Occupational Experience Records	15
METHODS AND PROCEDURES	20
Population and Sample	20
Instrumentation	20
Data Collection	21
Analysis of Data	22
FINDINGS	24
Biographical Characteristics of the Respondents	24
Relationships Between Selected Biographical Characteristics	29
Importance of SOE Program Record Keeping in Developing Record Keeping Abilities	35
SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS	85
Conclusions	86

	Page
Recommendations	94
LITERATURE CITED	99
ACKNOWLEDGMENTS	102
APPENDIX A. QUESTIONNAIRE	103
APPENDIX B. COVER LETTERS FOR QUESTIONNAIRE	109

LIST OF TABLES

		Page
Table 1.	Personal characteristics of respondents	25
Table 2.	Types of SOE students participated in and their most valued SOE in vocational agriculture	29
Table 3.	Chi-square test for relationship between student classroom hours per month spent on SOE records and number of instructor visits received per year	30
Table 4.	Chi-square test for relationship between classroom hours spent on SOE records and students' highest FFA degree	31
Table 5.	Chi-square test for relationship between students' most valued SOE and number of instructor visits received per year	32
Table 6.	Chi-square test for relationship between students' most valued SOE and their highest FFA degree	32
Table 7.	Chi-square test for relationship between students' most valued SOE and their financial net worth at high school graduation	33
Table 8.	Chi-square test for relationship between students' home location and their highest FFA degree	34
Table 9.	Chi-square test for relationship between students' financial net worth at high school graduation and highest FFA degree	35
Table 10.	Total sample means and standard deviations for students' perceived importance of SOE record keeping in developing selected record keeping abilities	37
Table 11.	Means, standard deviations, and F-ratios for students' perceived importance of SOE record keeping in developing selected record keeping abilities by students' university classification	39

Page

Table 12. Means, standard deviations, and F-ratios for students' perceived importance of SOE record keeping in developing selected record keeping abilities by students' classroom hours spent per month on SOE records 43

Table 13. Means, standard deviations, and F-ratios for students' perceived importance of SOE record keeping in developing selected record keeping abilities by number of instructor SOE visits received per year 48

Table 14. Means, standard deviations, and F-ratios for students' perceived importance of SOE record keeping in developing selected record keeping abilities by students' financial net worth at high school graduation. 52

Table 15. Means, standard deviations, and F-ratios for students' perceived importance of SOE record keeping in developing selected record keeping abilities by Agricultural Education 317A enrollment status 55

Table 16. Means, standard deviations, and t-values for students' perceived importance of SOE record keeping in developing selected record keeping abilities by semesters of vocational agriculture completed by students 59

Table 17. Means, standard deviations, and t-score values for students' perceived importance of SOE record keeping in developing selected record keeping abilities by school vocational agriculture course offering structure 62

Table 18. Means, standard deviations, and t-values for students' perceived importance of SOE record keeping in developing selected record keeping abilities by students' most valued SOE 65

Table 19. Means, standard deviations, and t-values for students' perceived importance of SOE record keeping in developing selected record keeping abilities by students' home location 69

Page

Table 20. Means, standard deviations, and t-values for students' perceived importance of SOE record keeping in developing selected record keeping abilities by fathers' enrollment in Vo. Ag. 72

Table 21. Means, standard deviations, and t-values for students' perceived importance of SOE record keeping in developing selected record keeping abilities by students' highest FFA degree 75

Table 22. Means, standard deviations, and t-values for students' perceived importance of SOE record keeping in developing selected record keeping abilities by students' Economics 230 enrollment status 79

Table 23. Means, standard deviations, and t-values for students' perceived importance of SOE record keeping in developing selected record keeping abilities by students' occupational plans 82

INTRODUCTION

Since the inception of the Smith-Hughes Act of 1917, practice or experience has been required as an integral part of the public school vocational agriculture program. This Act stated:

> "...that such schools shall provide for directed or supervised practice in agriculture, either on a farm provided for by the school or other farms for at least six months per year." (18, p. 5078).

The terminology for supervised practice has evolved over the last fifty years. Today "supervised occupational experience (SOE)" program is the commonly accepted terminology. One reason for this "new" term is the gradual increase in off-farm agricultural employment.

SOE is defined as the outside of class performance of the tasks required by workers in agricultural occupations for which systematic instruction and supervision are provided. Common types of SOE programs are farming programs, farm placement, employment in agribusiness, experiences utilizing school greenhouses or school farms, and others. "Farming" is no longer inclusive enough to cover all agricultural experiences and practices.

Students conducting supervised occupational experience programs are generally expected to keep records, both quantitative and qualitative types. Unfortunately, the record keeping aspect of the SOE program has not been looked on with favor by some students. Phipps (15) cited three general reasons for poor student attitudes toward records: 1) teachers view record keeping as a requirement from the state, 2) lack

of objectives for keeping records, and 3) little emphasis on motivation. These statements suggest that the instructor is in a key position to influence students' attitudes toward SOE program records. Therefore, it is important that teachers have a positive attitude about SOE program record keeping.

Beginning vocational agriculture instructors often encounter difficulty instructing students in SOE program record keeping. They developed the attitude that SOE records are important through their preservice teacher education experiences or earlier experiences. However, this positive attitude is frequently challenged by students.

Information about the attitudes that former vocational agriculture students have toward SOE program records and factors influencing these attitudes could be used to help teachers meet this challenge.

Purpose and Objectives

The purpose of the study was to identify factors influencing the attitudes of former vocational agriculture students who are preparing to be vocational agriculture teachers toward SOE program record keeping.

The specific objectives were to:

1. Determine if significant relationships existed between selected biographical variables.
2. Determine if significant differences existed in attitudes among students grouped according to Iowa State University student classification.
3. Determine if significant differences existed in attitudes

among students grouped according to Agricultural Education 317A completion.

4. Determine if significant differences existed in attitudes between students grouped according to Economics 230 or Industrial Administration 384 completion.
5. Determine if significant differences existed in attitudes between students grouped according to semesters of high school vocational agriculture completed.
6. Determine if significant differences existed in attitudes among students grouped according to hours per month class time allotted for instruction and work on SOE records.
7. Determine if significant differences existed in attitudes among students grouped according to the number of instructor SOE visits received per year.
8. Determine if significant differences existed in attitudes among students grouped according to local vocational agriculture program structure.
9. Determine if significant differences existed in attitudes among students grouped according to students' most valued SOE.
10. Determine if significant differences existed in attitudes among students grouped according to financial net worth at high school graduation.
11. Determine if significant differences existed in attitudes among students grouped according to highest FFA degree received.

12. Determine if significant differences existed in attitudes between students grouped according to students' residence while attending high school.
13. Determine if significant differences existed in attitudes between students grouped according to their fathers' former enrollment in vocational agriculture.
14. Determine if significant differences existed in attitudes among students grouped according to students' occupational plans.

Significance of the Problem

The vocational agriculture instructor is in a position to affect student attitudes toward SOE program records. Attitudes that future teachers of vocational agriculture have will likely be passed on to their students. The attitudes teachers possess toward SOE program record keeping are developed to a large extent during their high school years in vocational agriculture and the preservice teacher education program. Bundy (4) stated that many teachers find the record keeping phase of the SOE program to be a distressing aspect of their occupation. Beginning teachers are especially in need of assistance in this area.

Well kept records can play a major role in improving efficiency in agriculture production. With the increasing complexity of agriculture and reducing profit margins, greater efficiency will be needed than ever before. Records also can aid in the decision making process. If attitudes toward record keeping are not healthy, the use and usefulness of

records may be questionable.

Independent Variables

The following factors were selected to serve as independent variables:

1. Semesters of high school vocational agriculture.
2. Class time (hours per month) allotted for instruction and work on SOE records.
3. Types of SOE records expected to be kept.
4. Instructor SOE visits received per year.
5. Vocational agriculture program structure.
6. SOE conducted.
7. SOE for which records were kept.
8. Most valued SOE.
9. Residence while attending high school.
10. Father's enrollment in vocational agriculture.
11. Highest FFA degree attained.
12. Financial net worth at high school graduation.
13. Student classification at Iowa State University.
14. Agricultural Education 317A completion.
15. Economics 230 and/or Industrial Administration 384 completion.
16. Occupational plans after university graduation.

Dependent Variables

The record keeping abilities included in this study served as the dependent variables. They were as follows:

1. Appreciate the value of records.
2. Cultivate initiative in record keeping.
3. Maintain accurate records.
4. Keep neat records.
5. Keep useful records.
6. Maintain up-to-date records.
7. Meet Vo. Ag. teacher's requirement.
8. Pass the Vo. Ag. course.
9. Attain a higher FFA degree.
10. Earn a proficiency award.
11. Make management decisions.
12. Budget for productive enterprises.
13. Set efficiency goals.
14. Improve my SOE program.
15. Set goals for productive enterprises.
16. Plan improvement projects.
17. Select agricultural skills to develop.
18. Prepare business agreements.
19. Analyze livestock production costs.
20. Analyze crop production costs.
21. Record off-farm employment experiences.
22. Compare goals and actual results.
23. Measure overall SOE program success.
24. Determine profit or loss.

25. Obtain credit.
26. Calculate depreciation.
27. Calculate income tax.

Definitions

Definitions are given for the following terms used in this study:

SOE (Supervised Occupational Experience) - practical agricultural activities of educational value conducted by students outside of class for which systematic instruction and supervision are provided by teachers, parents, employers, or others (15).

SOE Records - organized recording of plans, activities, and results of SOE programs of high school vocational agriculture students.

Agricultural Education 317A - an Iowa State University course required in the preservice teacher education program. The course focuses on planning, organizing, conducting, and evaluating farm and off-farm occupational experience programs in agriculture (9).

Economics 230 - an Iowa State University course required in the preservice teacher education program. The course focuses on methods of keeping farm records and accounts for farm and tax management (9).

Industrial Administration 384 - an Iowa State University course required in the preservice teacher education program. The course focuses on introducing principles and procedures of general accounting, development of accounting reports on an accrual basis, business terminology, managerial control procedures relating to service, and retail organizations (9).

REVIEW OF LITERATURE

Supervised occupational experience has long been recognized as an important component of vocational agriculture. Planned participation by students in occupations is recognized by agriculture educators as the ultimate in the teaching and learning process.

The record keeping phase is likewise acknowledged as a component of the supervised occupational experience program. Although today's agricultural economy requires increased utilization of records, little research has been conducted in regard to the record keeping phase of supervised occupational experience programs.

The literature cited in this chapter is divided into three major sections: (1) supervised occupational experience through vocational agriculture, (2) supervised occupational experience records in vocational agriculture instruction, and (3) student benefits from supervised occupational experience records.

Supervised Occupational Experience Through Vocational Agriculture

The introduction of vocational agriculture into the local school curriculum was made possible by the passage of the Smith-Hughes Act by Congress in 1917. To receive federal funds, school districts were required to meet minimum standards. One of the standards was to provide students with directed or supervised practice in agriculture, either on a farm provided by the school or other farm, for at least six months per year (18). This vocational education legislation directed vocational

agriculture in the preparation for entry and advancement in farming occupations for forty-six years.

In 1963 new vocational education legislation was passed to improve and expand vocational education opportunities in the nation. This legislation challenged vocational agriculture to prepare people for work in the following occupational areas: (1) production agriculture, (2) agricultural products, (3) agricultural mechanics, (4) agricultural supplies and services, (5) horticulture, (6) renewable natural resources, (7) forestry, and (8) other agricultural occupations and professions (20).

Through the years supervised occupational experience in agriculture has provided an effective teaching method for vocational agriculture. Binkley and Hammonds (1) stated that the supervised experience program is the the teacher's opportunity to direct activities to produce intended learning outcomes. The instructor should be able to aid in providing the student with needed experience and increase the quality of the experience. Farm practice, supervised practice, work experience program, supervised work experience, supervised occupational experience program, and other terms have been used through the years to refer to this type of learning experience. The following statements made in the Office of Education publication, Developing Supervised Occupational Experience in Agriculture (21, p. 2), are helpful in understanding the meaning of supervised occupational experience:

> In general, occupational experience is the student's physical participation in one or more agricultural occupations. It is participation in performance of the required tasks and in their related responsibilities. This is the definition commonly

accepted by students, citizens, cooperating farmers and other agricultural businessmen; it is the road to competency for the individual.

Occupational experience is a part of the instructional program. It includes a sequence of learning experiences for students developed and guided under an instructor's leadership. This view is the educators concept of occupational experience.

Ultimately, occupational experience is learning. It is the discovery of interests and abilities in relation to agricultural employment. It is the development of skills, abilities, and understandings. It is change in the individual gained by his participation in agriculture.

Binkley and Hammonds (1, p. 45) viewed supervised occupational experience as "essential to learning and to the retention of learning."

Supervised Occupational Experience Records in Vocational Agriculture Instruction

The student s supervised occupational experience will be no better than the vocational agriculture instructor. The teacher must understand and believe in the value of supervised occupational experience programs. Ross and Clements (16) observed that the teacher must be enthusiastic about the students' supervised occupational experience plans.

Student record keeping is a systematic recording of the supervised occupational experience plans and activities. A proper perspective of the role of record keeping is necessary for both the student and teacher. Pearce (14) amplified this statement:

> "The keeping of records per se is not an integral part of the experience program. Record keeping should be a meaningful educational experience that will contribute to the present and future needs of the student. Records kept simply for the sake of meeting an arbitrary requirement are time consuming and too often of little educational value. For many of our students we have emphasized the procedure and neglected the purpose. Record keeping should serve as a means to an end, rather than an end in itself."

Instruction in supervised occupational experience program record keeping is essential. Ward (22) conducted a study in Iowa to determine content and emphasis placed on identified units of instruction in the economics of farm business management by Iowa's public supported institutions and extension personnel in various economic areas. Data were obtained by three separate questionnaires given to seventy-five vocational agriculture teachers, seventy-five county extension directors, and nine agriculture department heads in post-secondary area vocational schools providing farm management programs.

Ward (22) observed that 19.6 percent (38.7 hours) of the total instructional hours in farm business management were devoted to records and record analysis in vocational agriculture departments. "Records and record analysis" was reported by Ward as the most common instructional unit in Vo. Ag. I (2.2 hrs.), Vo. Ag. II (2.5 hrs.), Vo. Ag. III (10.3 hrs.), Vo. Ag. IV (6.6 hrs.) and small group personal visitation instruction in farm business management (6.0 hrs.).

Snell (19) listed seven suggestions for teachers to ensure that students benefit from the record keeping experience:

1. Use records that give desired information.
2. Keep records as simple as possible.
3. Resemble farmers' records as closely as possible.
4. Orient the students to the need and value of records.
5. Give encouragement and aid in establishing goals.
6. Give adequate instruction before and during the record keeping experience.

7. Use records to demonstrate usefulness.

According to Schmidt (17), the student's record book should be checked on the farm visit. He suggested spending one day per week in class on program records.

Supervised occupational experience program record keeping may be one of the more difficult areas for the instructor to provide adequate instruction. As a result the record keeping phase of supervised occupational experience has undergone extensive criticism. Deyoe (5) cited some common criticisms of the record keeping phase of supervised occupational experience:

1. Little attempt made by the instructor to show students the need for records. Students are not motivated to keep and use records.
2. Lack of accuracy in record keeping.
3. Records kept frequently of little value.
4. Difficult records forced on students before they realize the need for them.
5. Records often too narrow in scope; not kept for the entire program.
6. Little attention paid to non-financial or efficiency records compared to financial records.

Phipps (15) cited lack of development of sound objectives for record keeping as an additional criticism of supervised occupational experience program record keeping instruction.

Kahler (10) conducted a study in Iowa to determine (1) problems

encountered by beginning teachers of vocational agriculture in conducting vocational agriculture programs, and (2) adjustments needed in the Teacher Education program in agriculture at Iowa State University to better prepare prospective teachers in meeting and solving these problems.

Fifteen teachers in each of the following categories particpated in the study: (1) one year of teaching, (2) two years of teaching, (3) three to five years of teaching, and (4) more than five years of teaching. Eleven vocational agriculture program areas were studied including the agriculture experience program. Kahler's findings revealed that teachers as a whole felt that "teaching students in record keeping" and "assisting employers in analyzing and using students' occupational experience records" were among the three most difficult aspects to teach in the agricultural experience program area.

Teaching students in record keeping was among the thirty most important activities (twenty-first) as indicated by all the teachers out of 187 specific teacher activities identified for the study.

Among the thirty most difficult activities as indicated by all teachers were the following:

- Teaching students in record keeping (ninth);
- Assisting employers in analyzing and using student occupational experience program records (fifteenth); and
- Assisting students in analyzing and using their occupational experience program records (twenty-sixth).

The agriculture experience program area was the fifth most important area

out of eleven to the teachers, but the second most difficult area. This suggested a need for continuing education for vocational agriculture instructors in this area.

Webb (24) conducted a study among vocational agriculture instructors and teacher supervisors to determine relative degrees of difficulty experienced by teachers of vocational agriculture in conducting supervised farming programs. Teachers ranked ten items from most difficult to least difficult. The four most difficult items were directly related to student records and record keeping. The four items cited by teachers as most difficult were ranked among the top seven by teacher supervisors as needing much improvement.

Kruskop (11) undertook a study in 1966 in Iowa to determine (1) the competencies in farm management needed by vocational agriculture instructors, (2) the degree of competency possessed by the instructors, and (3) where the competencies were acquired. Thirty farm management competencies were studied.

Two competencies, (1) understanding of farm record keeping and farm business analysis and (2) ability to analyze and interpret records were the farm management competencies needed most by vocational agriculture instructors.

In discussing the mean differences in competencies needed and possessed, Kruskop (11) suggested that instructors were better equipped to keep records than they were to analyze and interpret them.

Student Benefits from Supervised Occupational Experience Records

As a result of conducting a supervised occupational experience program, the student is expected to maintain records on the experience. Snell (19, p. 195) observed that the purpose of records was to "enable the student to know the results of his work and the degrees of success achieved."

In his article "Record Keeping - Chore or Opportunity," Snell listed three potential benefits of record keeping to the student: (1) increased interest and appreciation of good records, (2) better understanding of purposes record keeping can serve, and (3) resulting from experience the student will learn to keep records on his own initiative.

Concepts and understandings which students should develop from keeping supervised occupational experience program records are as follows: (1) good business management records are essential, (2) keep only useful records, (3) good records are not difficult to keep, and (4) records must be truthful to be useful (18).

Eicken (7, p. 253) listed ten points to summarize essentials which make a successful supervised occupational experience for students in vocational agriculture. Student records were emphasized by one of his ten essential points as follows:

> "...a maintained detailed system of records kept by students showing progressive occupational planning, progress, and an expression of profit and loss, or clearly defined environmental improvement projects."

For records to be effective they must be kept twelve months a year. Weigers (25) stated that students should take their record books home during the summers. Records should be maintained and assistance given by the instructor as needed.

Students frequently display negative attitudes and behaviors in supervised occupational experience program record keeping. According to Snell (19) many students look upon record keeping as a tedious and uninteresting chore to get through as easily and painlessly as possible. Because of this attitude, obtaining good records from some students may be impossible.

Bundy (4) stated that many vocational agriculture students find project record keeping to be a very painful process. He cited the reason as failure of students to see the value of records. They were content to meet the minimum requirement set forth by the instructor. Bundy also noted that unless farming program records are used by the student, records are of little value.

Williams (26) undertook a study on supervised occupational experience programs of Iowa high school vocational agriculture students. The study cited the importance high school vocational agriculture students placed on maintaining records and reports in developing their occupational abilities.

Students were grouped according to their last type of supervised occupational experience. The three types were (1) ownership, (2) employment, and (3) responsibility. The mean ratings for the three groups on the importance of supervised occupational experience in developing their occupational abilities revealed that the ability to "maintain and use records and reports" was among the top five of the thirty-eight abilities listed for all three groups.

The students' occupational plans may affect the importance of

records. The mean was significantly higher for the ability to "maintain and use records and reports" for students who planned to farm than for students who planned to enter off-farm agricultural occupations. Williams' study further indicated that students who planned to farm perceived their supervised occupational experience as being very important in developing their ability to maintain and use records and reports. This ability was rated third among the thirty-eight abilities studied.

Students with "ownership" supervised occupational experience rated the records they kept among the five most important factors in planning and conducting their supervised occupational experience programs (26).

Woodin (27) outlined seven basic characteristics of an occupational experience program that will meet the basic requirements of all students. Among them were three that relate to record keeping: (1) include a financial arrangement that will insure equitable division of the costs and returns for the parties involved, (2) when possible, provide experiences in risk bearing, financing, marketing, and the use of credit, and (3) provide opportunities for experience in decision making and other managerial skills.

In discussing future trends in agriculture and agricultural education, Woodin anticipated that farm records would become more important. He cited the main reason as an increase in student opportunities for making important decisions. The trend according to Woodin will be for agricultural records to play a more important role in the decision making process.

Many people perceive records as financial records alone. The use-

fulness of the records depends on the types of records kept. Duncan and Toban (6) suggested that supervised occupational experience program records should include qualitative information as well as financial records. When entries are limited to amounts of money, the use of the records are limited to monetary comparisons. However, when both types of information are recorded, then both factors can be measured.

Several types of supervised experience records are kept by students which serve as measurement tools. Bjoraker (2) identified the following monetary and qualitative records: (1) inventory, (2) financial statements, (3) income/expense, (4) profit and loss, (5) depreciation and other tax, (6) production, (7) feed utilization, (8) individual enterprise, (9) enterprise labor utilization, (10) experimental, (11) cash flow, and (12) internal non-cash transactions.

Several objective diagnostic tools are available which measure the financial performance of a superivsed experience. Bjoraker (2) cited the following: (1) gross cash income, (2) net cash accumulated at the end of the year, (3) net cash operating income, (4) profit and loss, (5) net income, and (6) change in net worth.

Another fundamental purpose of well-designed records is to serve as an aid in planning future supervised occupational experiences. Binkley and Hammonds (1) supported this statement by citing the following benefits of records to the student: (1) satisfaction of understanding of records, and (2) guide in making future improvements.

Goals set at the beginning of the experience can be compared with the actual results. Leske (12) cited the following values of following

this process:

1. Students develop their own objectives for their supervised occupational experience programs.
2. Students see value in the study and use of management practices.
3. Analysis of each supervised experience is given a purpose.
4. Students understand the purpose of keeping records.

In addition to measuring progress and planning, records serve additional practical purposes. Bjoraker (2) listed the following: (1) depreciation calculations, (2) income tax compilation, and (3) business arrangement such as operating agreements, partnerships, and corporations.

METHODS AND PROCEDURES

The study was in part descriptive, but primarily a causal comparative or ex-post facto type of study as described by Borg and Gall (3).

Population and Sample

The population for this research was the undergraduate students at Iowa State University whose primary major was Agricultural Education. The population was further defined to include only those enrolled during Winter Quarter, 1978, who had completed one or more years of high school vocational agriculture.

A listing of all students in the population was obtained from the Agricultural Education Department at Iowa State University. The population was divided into Freshmen, Sophomores, Juniors, and Seniors according to Fall Quarter, 1977 classification. A stratified random sample of 100 students was drawn from the population. To ensure that the sample was representative, subsamples were drawn in proportion to the number of students in each strata.

Instrumentation

The steps followed in the development of a two-part questionnaire for this research study were as follows:

1. A list of possible factors (Part I) influencing SOE record keeping attitudes and a list of the abilities (Part II) which students may develop through SOE program record keeping was developed through a review of the literature, experiences of

the researcher, and suggestions from Agricultural Education staff members at Iowa State University.

2. Response procedures were developed for each factor and ability. Part I requested the respondents to mark the alternative response that best described their situation and to write responses to specific questions. Some university students were asked to help identify appropriate alternative responses for some factors. Respondents were instructed to rate the abilities using a scale ranging from one to eleven. A rating of one represented "no importance" while eleven represented "utmost importance."
3. A draft of the questionnaire was reviewed by Agricultural Education graduate students who had taught or planned to teach secondary vocational agriculture, members of the researcher's graduate committee, and selected members of the Agricultural Education faculty at Iowa State University to ascertain content validity.
4. The final instrument was developed using the suggestions of the reviewers.
5. An informed consent statement that required the students' signatures was included in the questionnaire.

Data Collection

The questionnaire with a cover letter was distributed to each of the one hundred students on January 23, 1978. The questionnaire was

hand delivered to fifty-six students in the sample enrolled in Agricultural Education courses during Winter Quarter, 1978. The remaining forty-four received their questionnaires by mail. The first follow-up mailing made on February 16, 1978, consisted of a personalized cover letter and a copy of the questionnaire. Non-respondents were contacted personally or by telephone by the researcher prior to March 1, 1978. These procedures yielded a 98 percent return of properly completed questionnaires. A questionnaire and a copy of each cover letter appears in Appendixes A and B.

After each questionnaire was reviewed, the data were key punched into 80-column International Business Machine cards by the Iowa State University Computation Center. The ability rating scores on the one to eleven scale were transformed to scores ranging from zero to sixteen as described by Warren et al. (23).

Analysis of Data

The mean scores and standard deviations were computed for all the abilities. Computer subprograms from the Statistical Package for the Social Sciences (SPSS) were used to analyze the data (13). Chi-square was used to test for significant relationships between selected biographical variables. A two-tailed t-test was used to test for significant differences between two groups of students on each of the twenty-seven abilities studied. One-way analysis of variance was used to test for significant differences among three or more groups of students on each of the twenty-seven abilities studied. When F-ratios ($P<.05$) were ob-

served, the Scheffé Test was used to identify significant differences between all the possible pairs of group means. The .10 significance level, as recommended by Ferguson (8), was used with the Scheffé procedure.

FINDINGS

This research was a study of factors affecting student attitudes toward supervised occupational experience (SOE) record keeping in vocational agriculture.

The findings are divided into the following sections: (1) biographical characteristics of the respondents, (2) relationships between selected biographical characteristics, and (3) importance of SOE program record keeping in developing record keeping abilities.

Biographical Characteristics of the Respondents

Respondents in the study were Agricultural Education majors at Iowa State University who had vocational agriculture in high school. Table 1 presents a summary of selected personal characteristics of the respondents.

High school vocational agriculture departments normally offer students a four year or eight semester program. Table 1 reveals that a majority (72.4 percent) of the respondents completed eight semesters or more of high school vocational agriculture. The mean number of semesters completed was 7.4 semesters.

Class time in vocational agriculture is often devoted to instruction and maintenance on SOE records. Slightly less than half (43.7 percent) of the students were allotted two hours or more per month during their vocational agriculture program for SOE record keeping. The mean number of class hours per month devoted to SOE records was 2.7 hours.

Table 1. Personal characteristics of respondents

Characteristics	Number	Percent
Semesters Vo. Ag.		
8 or over	71	72.4
0-7	27	27.6
Class time hours on SOE records per month		
over 2 hours	42	43.7
0-2 hours	54	56.3
Types of SOE records expected to keep		
income/expense	91	92.9
improvement project	86	87.8
agricultural skill	85	86.7
budget	47	48.0
monthly plans	28	28.6
goals	71	72.4
employment experience	50	51.0
Instructor SOE visits received per year		
over 1 visit	50	52.1
0-1	46	47.9
Vo Ag course offering structure:		
Vo. Ag. I, II, III, IV	76	77.6
Semester or combination	22	22.4
Home location		
farm	86	87.7
nonfarm	12	12.3
Father former Vo. Ag. student	24	24.5

Table 1. (Continued)

Characteristics	Number	Percent
Highest FFA degree		
American Farmer or State Farmer	47	48.0
Chapter Farmer or Greenhand	50	51.0
Not in FFA	1	1.0
Financial net worth at high school graduation		
$0-$3000	42	42.8
$3001-$7000	27	27.5
over $7000	29	29.7
Occupational plans		
teaching vocational agriculture.	61	62.2
other	37	37.8

The respondents were surveyed to find the types of SOE records they were expected to keep for their SOE program. Over 70 percent of the students indicated they were expected to keep the following types of SOE records: (1) income/expense, (2) improvement project, (3) agricultural skills, and (4) goals. Budget (48.0 percent) and monthly plans (28.6 percent) were records expected to be kept by less than half of the respondents.

Students received an average of 2.3 SOE visits per year from their instructors. Slightly over half (52.1 percent) of the respondents received more than one instructor SOE visit per year.

Over three-fourths (77.6 percent) of the sample were students in a Vocational Agriculture I, II, III, and IV course offering structure. These are two-semester courses normally taken in sequence during a student's freshman through senior high school years.

Almost 88 percent (87.7 percent) of the students lived on a farm while in vocational agriculture. The remainder (12.3 percent) either lived in a town or rural area other than a farm.

The respondents were asked to indicate whether or not their fathers were former vocational agriculture students. Less than one out of four (24.5 percent) of the respondents' fathers were former vocational agriculture students.

In analyzing the data pertaining to students' highest FFA degree attained, some of the FFA degrees were combined. Almost one half (48.5 percent) had received FFA degrees above the chapter level including State Farmer and American Farmer degrees. Half (51.5 percent) of those attaining FFA degrees received their highest degrees at the local chapter level. This level includes the Greenhand and Chapter Farmer degrees. Only one percent of the sample was not in FFA.

Information regarding the students' financial net worth at the time of high school graduation was obtained. Four out of every ten (42.8 percent) of the respondents expressed a financial net worth of $3000 or less. The data also revealed that over one-fourth (27.5 percent) of the students had a net worth ranging from $3001 to $7000 dollars. The remainder (29.7 percent) listed a financial net worth in excess of $7000.

The respondents were asked to indicate their occupational plans after graduation from Iowa State University. Over sixty percent (62.2 percent) planned to teach vocational agriculture. The remaining 37.8 percent planned on entering other occupations including farming, agribusiness, extension service, and the Peace Corps.

Types of SOE of students

Table 2 lists the number and percentage of the respondents who participated in different types of vocational agriculture SOE and their most valued SOE. Many of the students participated in more than one type of SOE while enrolled in vocational agriculture.

Almost 93 percent of the students participated in a farming program while enrolled in vocational agriculture. Three out of four (75.5 percent) listed supervised farming programs as their most valued SOE. Nearly one-half (46.9 percent) received occupational experience through farm placement and one-fifth (20.4 percent) participated in cooperative agribusiness placement. One in five (21.4 percent) of the respondents named one of these two types of cooperative programs as their most valued SOE in vocational agriculture. School laboratories were used by 20.4 percent of the students to obtain occupational experience at some time in their vocational agriculture program. Only one percent rated use of school laboratories as their most valued SOE. Seven percent of the respondents reported participation in supervised exploratory experience programs while enrolled in vocational agriculture. Only one percent indicated that this type of experience

Table 2. Types of SOE students participated in and their most valued SOE in vocational agriculture

Type of SOE program	Participation in SOE		Most Valued SOE	
	No.	percent	No.	percent
Supervised farming	91	92.8	74	75.5
Cooperative farm placement	46	46.9	15	15.3
Cooperative agribusiness placement	20	20.4	6	6.1
Supervised laboratory experience	20	20.4	1	1.0
Supervised exploratory experience	7	7.1	1	1.0

was their most valued SOE.

Relationships Between Selected Biographical Characteristics

This section tests for relationships between selected biographical characteristics of the research sample. The chi-square analysis was used to test for relationships at the .05 level of significance.

Classroom hours per month for SOE records and number of instructor SOE visits

Table 3 presents the relationship between students' classroom hours per month spent on SOE records and instructor SOE visits per student per year. The chi-square of 6.86 was not significant at the .05

Table 3. Chi-square test for relationship between student classroom hours per month spent on SOE records and number of instructor visits received per year

Classroom hours per month on SOE records	FREQUENCY OF RESPONSE					
	Group 1[a]		Group 2[a]		Totals	
	No.	percent	No.	percent	No.	percent
0 - 1	17	37.8	10	20.4	27	28.7
2	13	28.9	13	26.5	26	27.7
3	7	15.6	6	12.2	13	13.8
Over 3	8	17.8	20	40.9	28	29.8
Total	45	47.9	49	52.1	94	100.0
	Chi-Square = 6.86 ns					

[a]Group 1 = students who received one or less instructor SOE visits per year; Group 2 = students who recieved two or more SOE visits per year.

level, indicating that no significant relationship existed between classroom hours spent per month on SOE records and the number of SOE visits made by instructors.

Highest FFA degree and classroom hours per month

The data for the chi-square test for relationships between the variables "highest FFA degree" and "classroom hours per month" are presented in Table 4. The chi-square value 5.61 was not significant at the .05 level. Therefore, it may be concluded that no relationship existed between students' highest FFA degree and classroom hours per month on SOE records.

Table 4. Chi-square test for relationship between classroom hours spent on SOE records and students' highest FFA degree

Classroom hours per month	FREQUENCY OF RESPONSE					
	Group 1[a]		Group 2[a]		Totals	
	No.	percent	No.	percent	No.	percent
0 - 1	19	38.0	9	19.6	28	29.2
2	11	22.0	15	32.6	26	27.1
3	5	10.0	8	17.4	13	13.5
4	6	12.0	8	17.4	14	14.6
5 or more	9	18.0	6	13.0	15	15.6
Total	50	52.1	46	47.9	96	100.0
	Chi-Square = 5.61 ns					

[a]Group 1 = students who received Greenhand or Chapter Farmer degree; Group 2 = students who received State Farmer degree or American Farmer degree

Most valued SOE and number of instructor SOE visits

No significant relationship existed between students' most valued SOE and number of instructor SOE visits received by students per year as indicated by the chi-square value of 0.43 reported in Table 5.

Most valued SOE and highest FFA degree

A chi-square test applied to the relationships between students' most valued SOE and their highest FFA degree revealed that no significant relationship existed. Table 6 displays a non-significant chi-square value of 0.45 at the .05 level.

Table 5. Chi-square test for relationship between students' most valued SOE and number of instructor visits received per year

Most valued SOE	FREQUENCY OF RESPONSE					
	Group 1[a]		Group 2[a]		Totals	
	No.	percent	No.	percent	No.	percent
Supervised farming program	34	73.9	39	79.6	73	76.8
Other	12	26.1	10	20.4	22	23.2
Total	46	48.4	49	51.6	95	100.00
	Chi-square = 0.43 ns					

[a]Group 1 = students who received one or less instructor SOE visits per year; Group 2 = students who received two or more instructor SOE visits per year.

Table 6. Chi-square test for relationship between students' most valued SOE and their highest FFA degree

Most valued SOE	FREQUENCY OF RESPONSE					
	Group 1[a]		Group 2[a]		Totals	
	No.	percent	No.	percent	No.	percent
Supervised farming program	37	72.5	37	80.4	74	76.3
Other	14	27.5	9	19.6	23	23.7
Total	51	52.6	46	47.4	97	100.00
	Chi-square = 0.45 ns					

[a]Group 1 = students who received Greenhand or Chapter Farmer degrees; Group 2 = students who received State Farmer degree or American Farmer degree.

Most valued SOE and financial net worth

Table 7 presents the relationship between students' most valued SOE and their financial net worth at the time of high school graduation. The chi-square value of 2.28 was not significant at the .05 level, indicating that no significant relationship existed between these biographical variables.

Table 7. Chi-square test for relationship between students' most valued SOE and their financial net worth at high school graduation

	FREQUENCY OF RESPONSE					
	Group 1[a]		Group 2[a]		Totals	
Most valued SOE	No.	percent	No.	percent	No.	percent
Supervised farming program	29	69.0	45	81.8	74	76.3
Other	13	31.0	10	18.2	23	23.7
Total	42	43.3	55	56.7	97	100.0
	Chi-square = 2.28 ns					

[a]Group 1 = students with $3000 net worth or less at high school graduation; Group 2 = students with more than $3000 net worth at high school graduation

Home location and highest FFA degree

The data for the chi-square tests for relationship between the variables home locations and students' highest FFA degree are presented in Table 8. The chi-square value of 1.93 was not significant at the .05 level. Therefore, it may be concluded that no relationship existed between home location and student's highest FFA degree.

Table 8. Chi-sqaure test for relationship between students' home location and their highest FFA degree

Home location	FREQUENCY OF RESPONSE					
	Group 1[a]		Group 2[a]		Totals	
	No.	percent	No.	percent	No.	percent
Farm	42	82.4	44	93.6	86	87.8
Nonfarm	9	17.6	3	6.4	12	12.2
Total	51	52.0	47	48.0	98	100.00
	Chi-square = 1.93 ns					

[a]Group 1 = students who received Greenhand or Chapter Farmer degrees; Group 2 = students who received State Farmer or American Farmer degrees

Financial net worth and highest FFA degree

A highly significant relationship existed between students' financial net worth at time of high school graduation and highest FFA degree as indicated by the chi-square value of 28.84 reported in Table 9. This value was found to be significant at the .01 level. This significant relationship was expected because net worth is frequently used as one criterion for awarding FFA degrees.

Table 9. Chi-square test for relationship between students' financial net worth at high school graduation and highest FFA degree

Net worth at high school graduation	FREQUENCY OF RESPONSE					
	Group 1[a]		Group 2[a]		Totals	
	No.	percent	No.	percent	No.	percent
$3000 or less	33	64.7	9	19.1	42	42.9
$3000-7000	14	27.5	13	27.7	27	27.6
Greater than $7000	4	7.8	25	53.2	29	29.6
Total	51	52.0	47	48.0	98	100.0
	Chi-square = 28.84**					

[a]Group 1 = students who received Greenhand or Chapter Farmer degrees; Group 2 = students who received State Farmer or American degrees

**Significant at the .01 level.

Importance of SOE Program Record Keeping in Developing Record Keeping Abilities

Ratings of the importance of high school vocational agriculture SOE program record keeping in developing record keeping abilities were analyzed by grouping the 98 respondents in the following ways: (1) students' university classification, (2) number of classroom hours per month devoted to SOE records, (3) number of instructor SOE visits per student, (4) net worth of students at high school graduation, (5) students' enrollment in Agricultural Education 317A, (6) semesters of vocational agriculture completed, (7) school vocational agriculture course offering structure, (8) students' most valued SOE, (9) students'

home location, (10) fathers' enrollment in vocational agriculture, (11) students' highest FFA degree, (12) students' enrollment in Economics 230, and (13) students' occupational plans.

Subsections that parallel the above named groups are included in this section. A presentation of data for the total sample precedes these analyses.

The record keeping abilities which appear in the tables are listed in the order that they appeared on the questionnaire. When interpreting the means appearing in the tables in this section, the reader is reminded that the 1-11 scale used on the questionnaire was transformed to a 0-16 scale as described by Warren et al. (23).

One-way analysis of variance and t-test were used in analyzing the data.

Analysis by total sample

The means and standard deviations for the 27 record keeping abilities for the total sample are reported in Table 10. Twenty-two out of the 27 abilities were above the mid-point on a seventeen point scale. The five abilities rated the highest by the 98 respondents were: (1) determine profit or loss, (2) analyze livestock production costs, (3) keep useful records, (4) maintain up-to-date records, and (5) maintain accurate records.

The five record keeping abilities rated the lowest by the respondents were: (1) prepare business agreements, (2) calculate income tax, (3) obtain credit, (4) record off-farm employment experiences, and

Table 10. Total sample means and standard deviations for students' perceived importance of SOE record keeping in developing selected record keeping abilities

Record keeping ability	Mean	Standard Deviation
Appreciate the value of records	10.63	3.10
Cultivate initiative in record keeping	9.68	2.78
Maintain accurate records	10.65	3.24
Keep neat records	10.19	2.96
Keep useful records	10.84	3.05
Maintain up-to-date records	10.67	3.29
Meet Vo. Ag. teacher's requirement	9.70	4.07
Pass the Vo. Ag. course	8.44	6.65
Attain a higher FFA degree	9.79	4.52
Earn a proficiency award	9.04	4.38
Make management decisions	9.59	3.48
Budget for productive enterprises	8.84	3.83
Set efficiency goals	9.29	3.43
Improve my SOE program	9.49	3.21
Set goals for productive enterprises	9.45	2.91
Plan improvement projects	8.54	3.04
Select agricultural skills to develop	8.92	5.50
Prepare business agreements	7.87	3.59

Table 10. (Continued)

Record keeping ability	Mean	Standard Deviation
Analyze livestock production costs	11.24	6.11
Analyze crop production costs	9.57	4.51
Record off-farm employment experiences	6.86	4.58
Compare goals and actual results	9.55	3.27
Measure overall SOE program success	9.59	3.32
Determine profit or loss	12.06	3.88
Obtain credit	6.88	5.07
Calculate depreciation	6.86	4.24
Calculate income tax	7.09	5.27

(5) calculate depreciation.

Analysis by university classification of students

The means, standard deviations, and F-ratios for the 27 record keeping abilities where students were grouped according to their classification at Iowa State University are reported in Table 11. There were significant differences among the four groups of students on the perceived importance of SOE program record keeping in developing only four of the 27 abilities. For all four abilities where signif-

Table 11. Means, standard deviations, and F-ratios for students' perceived importance of SOE record keeping in developing selected record keeping abilities by students' university classification

Record keeping ability	Group 1[a] Mean / S.D.	Group 2[a] Mean / S.D.	Group 3[a] Mean / S.D.	Group 4[a] Mean / S.D.	F-Ratio
Appreciate the value of records	11.57 / 2.87	10.26 / 4.56	10.27 / 2.65	10.69 / 2.43	0.91
Cultivate initiative in record keeping	10.57 / 2.23	9.10 / 3.21	9.03 / 3.15	10.08 / 2.26	1.81
Maintain accurate records	12.35 / 3.07	9.63 / 3.80	10.00 / 2.73	10.46 / 2.87	3.50* (1>2,3)[b]
Keep neat records	11.04 / 2.38	9.05 / 3.70	10.10 / 2.56	10.35 / 3.11	1.64
Keep useful records	12.00 / 2.81	9.48 / 3.22	10.33 / 2.87	10.73 / 2.44	2.23
Maintain up-to-date records	12.95 / 2.93	9.84 / 3.88	10.20 / 2.94	9.77 / 2.67	5.68** (1>2,3,4)[b]
Meet Vo. Ag. teacher's requirement	11.00 / 3.68	8.89 / 4.00	8.93 / 3.96	9.77 / 4.02	1.48
Pass the Vo. Ag. course	10.65 / 3.30	6.74 / 3.69	7.20 / 3.45	7.07 / 4.17	5.76** (1>2,3,4)[b]

[a]Group 1 = students classified as freshmen (N = 23); Group 2 = students classified as sophomores (N = 19); Group 3 = students classified as juniors (N = 30); Group 4 = students classified as seniors (N = 26).

[b]Group means differed significantly at the .10 level.

*Significant at the .05 level.

**Significant at the .01 level.

Table 11. (Continued)

Record keeping ability	Group 1[a] Mean / S.D.	Group 2[a] Mean / S.D.	Group 3[a] Mean / S.D.	Group 4[a] Mean / S.D.	F-Ratio
Attain a higher FFA degree	10.34 / 4.60	8.58 / 5.51	9.50 / 4.12	10.15 / 4.03	.65
Earn a proficiency award	10.48 / 4.25	8.58 / 4.57	9.20 / 4.17	9.73 / 3.91	.80
Make management decisions	11.22 / 2.50	8.05 / 4.45	8.87 / 2.69	9.69 / 2.83	4.18** (1>2,3)[b]
Budget for productive enterprises	9.43 / 4.04	7.52 / 4.33	8.77 / 3.62	9.12 / 3.20	1.00
Set efficiency goals	9.57 / 2.69	7.53 / 4.70	9.24 / 2.57	9.88 / 2.50	2.35
Improve my SOE program	9.22 / 2.94	8.15 / 3.89	9.53 / 2.35	10.23 / 2.64	1.91
Set goals for productive enterprises	9.35 / 2.90	7.95 / 3.78	9.63 / 2.13	10.19 / 2.42	2.53 (4>2)[b]
Plan improvement projects	9.43 / 1.95	7.68 / 4.41	8.50 / 2.39	8.31 / 3.13	1.25
Select agricultural skills to develop	9.09 / 2.27	7.37 / 4.65	8.90 / 2.62	8.31 / 3.08	1.27
Prepare business agreements	8.13 / 3.17	7.11 / 4.46	8.07 / 2.65	7.50 / 3.42	.45
Analyze livestock production costs	11.17 / 2.67	9.05 / 5.51	10.97 / 2.85	11.38 / 2.93	1.92
Analyze crop production costs	9.00 / 4.50	10.50 / 5.46	9.80 / 4.04	10.28 / 4.04	.61
Record off-farm employment experiences	6.13 / 4.54	6.94 / 4.63	8.00 / 3.97	6.27 / 5.11	1.48
Compare goals and actual results	10.57 / 3.19	8.79 / 4.43	9.20 / 2.33	10.00 / 2.59	.27

Table 11. (Continued)

Record keeping ability	Group 1[a] Mean / S.D.	Group 2[a] Mean / S.D.	Group 3[a] Mean / S.D.	Group 4[a] Mean / S.D.	F-Ratio
Measure overall SOE program success	9.47 / 2.97	9.26 / 4.90	9.83 / 2.15	10.04 / 2.86	.27
Determine profit or loss	13.35 / 2.64	10.42 / 5.39	12.20 / 3.29	12.58 / 3.10	2.39 (1>2)[b]
Obtain credit	8.30 / 5.25	6.79 / 5.90	6.76 / 4.35	6.19 / 4.92	.77
Calculate depreciation	7.26 / 4.98	7.21 / 5.27	7.07 / 3.69	6.32 / 3.08	.26
Calculate income tax	7.91 / 5.60	6.57 / 5.76	7.73 / 4.30	6.34 / 5.51	.56

icant differences were found, the means were significantly higher for students classified as freshmen than for both sophomores and juniors. These abilities were: (1) maintain accurate records, (2) maintain up-to-date records, (3) pass the vocational agriculture course, and (4) earn a proficiency award.

The means for freshmen were significantly higher than the means for seniors for two abilities: (1) maintain up-to-date records, and (2) pass the vocational agriculture course.

There was similarity among the four groups in the record keeping abilities with the highest means. The five abilities rated the highest by freshmen were: (1) determine profit or loss, (2) maintain up-to-date records, (3) maintain accurate records, (4) keep useful re-

cords, and (5) appreciate the value of records.

The five record keeping abilities with the highest means for the sophomore group were: (1) analyze crop production costs, (2) determine profit or loss, (3) appreciate the value of records, (4) maintain up-to-date records, and (5) keep useful records.

The five abilities receiving the highest ratings by junior students were: (1) determine profit or loss, (2) analyze livestock production costs, (3) keep useful records, (4) appreciate the value of records, and (5) maintain up-to-date records.

The seniors placed the highest ratings on the following abilities: (1) determine profit or loss, (2) analyze livestock production costs, (3) keep useful records, (4) appreciate the value of records, and (5) maintain accurate records.

Analysis by classroom hours per month devoted to SOE records

Table 12 presents the means, standard deviations, and F-ratios for the 27 abilities when students were grouped according to the hours of classroom time spent on SOE records in vocational agriculture. There were significant differences among the five groups on the perceived importance of SOE program record keeping in developing six of the 27 abilities. The means were significantly higher for students who spent two classroom hours per month on SOE records than for students who spent one or less hours per month on SOE records for three abilities. These abilities were: (1) attain a higher FFA degree, (2) earn a proficiency award, and (3) analyze crop production costs.

Table 12. Means, standard deviations, and F-ratios for students' perceived importance of SOE record keeping in developing selected record keeping abilities by students' classroom hours spent per month on SOE records

Record keeping ability	Group 1[a] Mean / S.D.	Group 2[a] Mean / S.D.	Group 3[a] Mean / S.D.	Group 4[a] Mean / S.D.	Group 5[a] Mean / S.D.	F-Ratio
Appreciate the value of records	9.43 / 3.28	10.50 / 2.63	11.69 / 3.45	11.29 / 2.73	11.93 / 3.20	2.33
Cultivate initiative in record keeping	8.79 / 3.06	9.85 / 2.17	9.77 / 2.35	11.21 / 3.07	9.80 / 2.96	1.88
Maintain accurate records	9.25 / 3.49	10.46 / 2.55	10.92 / 2.33	13.00 / 2.29	11.20 / 3.73	3.85** (4>1)[b]
Keep neat records	9.07 / 3.88	10.81 / 2.55	9.77 / 2.86	11.36 / 3.03	10.47 / 2.26	2.02
Keep useful records	10.18 / 3.67	10.58 / 2.04	10.77 / 2.86	12.29 / 2.43	11.07 / 2.54	1.37
Maintain up-to-date records	9.82 / 4.09	10.19 / 2.53	10.69 / 2.63	12.50 / 2.47	11.47 / 3.64	1.95
Meet Vo. Ag. teacher's requirement	8.57 / 4.22	10.31 / 4.10	10.77 / 2.71	9.50 / 4.67	10.20 / 2.43	1.08

[a]Group 1 = students who spent one or less classroom hours per month on SOE records (N = 28); Group 2 = students who spent two classroom hours per month on SOE records (N = 26); Group 3 = students who spent three classroom hours per month on SOE records (N = 13); Group 4 = students who spent four classroom hours per month on SOE records (N = 14); and Group 5 = students who spent five or more classroom hours per month on SOE records (N = 15).

[b]Group means differed significantly at the .10 level.

**Significant at the .01 level.

Table 12. (Continued)

Record keeping ability	Group 1[a] Mean / S.D.	Group 2[a] Mean / S.D.	Group 3[a] Mean / S.D.	Group 4[a] Mean / S.D.	Group 5[a] Mean / S.D.	F-Ratio
Pass the Vo. Ag. Course	8.32 / 4.78	7.61 / 3.76	8.15 / 2.58	7.14 / 4.60	8.20 / 2.96	0.27
Attain a higher FFA degree	7.79 / 4.68	12.12 / 3.37	11.00 / 2.83	8.79 / 4.81	9.40 / 4.58	4.19** (2>1)[b]
Earn a proficiency award	7.61 / 3.84	11.77 / 4.01	10.23 / 2.45	7.86 / 4.62	10.60 / 3.91	4.94** (2>1,4)[b]
Make management decisions	8.50 / 4.21	9.38 / 2.30	10.85 / 2.58	10.14 / 3.01	9.67 / 3.09	1.40
Budget for productive enterprises	7.96 / 4.86	8.42 / 3.55	9.54 / 2.33	10.00 / 3.66	9.00 / 2.78	0.89
Set efficiency goals	8.44 / 3.95	9.12 / 3.33	10.31 / 2.36	10.07 / 2.76	8.47 / 2.17	1.22
Improve my SOE program	8.93 / 3.43	9.12 / 2.72	10.85 / 2.91	10.29 / 2.52	8.73 / 2.43	1.57
Set goals for productive enterprises	8.79 / 3.63	9.38 / 2.76	10.62 / 2.40	9.78 / 2.46	8.93 / 1.80	1.08
Plan improvement projects	7.00 / 3.89	8.65 / 2.38	10.15 / 2.30	8.93 / 2.13	8.87 / 2.39	3.13* (3>1)[b]
Select agricultural skills to develop	7.04 / 3.68	8.53 / 2.39	10.23 / 3.17	9.21 / 2.61	8.47 / 3.02	2.85* (3>1)[b]
Prepare business agreements	6.46 / 4.36	8.04 / 2.52	8.31 / 3.54	8.93 / 2.70	8.07 / 2.46	1.66
Analyze livestock productions costs	9.86 / 4.39	11.11 / 2.37	11.46 / 3.48	11.57 / 3.08	10.53 / 4.22	0.82
Analyze crop production costs	7.57 / 5.06	11.00 / 2.72	9.77 / 4.46	10.50 / 4.03	11.47 / 4.00	3.22* (2,5>1)[b]

*Significant at the .05 level.

Table 12. (Continued)

Record keeping ability	Group 1[a] Mean / S.D.	Group 2[a] Mean / S.D.	Group 3[a] Mean / S.D.	Group 4[a] Mean / S.D.	Group 5[a] Mean / S.D.	F-Ratio
Record off-farm employment experiences	5.08 / 5.06	7.84 / 4.13	7.42 / 2.68	7.00 / 4.80	8.27 / 4.51	1.73
Compare goals and actual results	9.36 / 3.60	9.08 / 2.81	10.69 / 3.01	9.21 / 3.19	10.73 / 2.73	1.15
Measure overall SOE program success	8.36 / 3.91	9.96 / 2.99	11.00 / 2.12	9.86 / 2.32	10.53 / 2.62	2.62
Determine profit or loss	11.64 / 4.95	11.73 / 2.60	12.23 / 2.74	13.93 / 2.06	13.33 / 2.97	1.52
Obtain credit	6.19 / 5.08	7.31 / 4.94	8.31 / 5.39	5.71 / 4.76	8.07 / 5.05	0.82
Calculate depreciation	5.93 / 3.80	6.19 / 4.41	6.85 / 4.56	9.14 / 3.25	8.47 / 4.09	2.20
Calculate income tax	5.64 / 5.46	7.31 / 5.22	8.00 / 4.74	8.93 / 4.68	7.80 / 5.47	1.14

Students who spent two hours per month on SOE records in class had a significantly higher mean than those who devoted four classroom hours per month to SOE records for the ability, "earn a proficiency award."

The means for students who spent three classroom hours per month on SOE records were significantly higher than for students who were allotted one or less classroom hours per month for instruction and work on SOE records for two abilities. These abilities were: (1) plan improvement projects and (2) select agricultural skills to develop.

Group four, students who spent four hours per month on SOE records, had a significantly higher mean than Group one, students who spent one hour or less per month on SOE records for the ability, "maintain accurate records."

The group which spent five or more classroom hours per month on SOE records had a significantly higher mean than students who spent one or less hours per month on SOE records on the ability "analyze crop production costs."

There was some similarity among the five groups in the record keeping abilities with the highest means. The five abilities rated the highest by students with one or less classroom hours per month allotted to SOE records were: (1) determine profit or loss, (2) keep useful records, (3) analyze livestock production costs, (4) maintain up-to-date records, and (5) appreciate the value of records.

The highest means observed for students who spent two hours per month on SOE records were for the following record keeping abilities: (1) attain a higher FFA degree, (2) earn a proficiency award, (3) determine profit or loss, (4) analyze livestock production costs, and (5) analyze crop production costs.

The five abilities receiving the highest ratings by students who were allotted three classroom hours per month for instruction and work on SOE records were: (1) determine profit or loss, (2) appreciate the value of records, (3) analyze livestock production costs, (4) measure overall SOE program success, and (5) attain a higher FFA degree.

Students who spent four classroom hours per month on SOE records

placed the highest ratings for the importance of SOE program record keeping in developing record abilities on the following abilities: (1) determine profit or loss, (2) maintain accurate records, (3) maintain up-to-date records, (4) keep useful records, and (5) analyze livestock production costs.

The five record keeping abilities with the highest means for the group which spent five or more classroom hours per month on SOE records were: (1) determine profit or loss, (2) appreciate the value of records, (3) maintain up-to-date records, (4) maintain accurate records, and (5) keep useful records.

Analysis by number of instructor SOE visits received by students

Table 13 reports the means, standard deviations, and F-ratios for the 27 abilities with students grouped according to the number of instructor visits the students received per year. A significant difference in ratings was observed among the groups for only one ability. The group which received three or more instructor SOE visits per year had a significantly higher rating than students who received two instructor SOE visits per year on the ability, "keep neat records."

The five abilities rated the highest by the group which received one or less instructor SOE visits per year were: (1) determine profit or loss, (2) keep useful records, (3) appreciate the value of records, (4) maintain accurate records, and (5) analyze livestock production costs.

Students who received two instructor SOE visits per year placed

Table 13. Means, standard deviations, and F-ratios for students' perceived importance of SOE record keeping in developing selected record keeping abilities by number of instructor SOE visits received per year

Record keeping ability	Group 1[a] Mean / S.D.	Group 2[a] Mean / S.D.	Group 3[a] Mean / S.D.	F-Ratio
Appreciate the value of records	10.30 / 3.47	10.52 / 2.68	11.37 / 2.83	1.02
Cultivate initiative in record keeping	9.43 / 2.92	8.96 / 2.64	10.56 / 2.53	2.34
Maintain accurate records	10.17 / 3.18	10.17 / 3.49	11.41 / 2.79	1.49
Keep neat records	9.85 / 3.15	9.43 / 2.59	11.37 / 2.73	3.30* (3>2)[b]
Keep useful records	10.35 / 3.04	10.65 / 2.84	11.52 / 2.67	1.41
Maintain up-to-date records	9.93 / 3.36	10.74 / 3.24	11.56 / 2.98	2.18
Meet Vo. Ag. teacher's requirement	9.50 / 4.00	9.52 / 3.59	10.07 / 4.15	0.20
Pass the Vo. Ag. course	7.63 / 4.01	8.17 / 4.41	8.04 / 3.61	0.17
Attain a higher FFA degree	9.39 / 4.96	9.87 / 3.99	10.41 / 3.81	0.45

[a]Group 1 = students who received one or less instructor SOE visits per year (N = 46); Group 2 = students who received two instructor SOE visits per year (N = 23); and Group 3 = students who received three or more instructor SOE visits per year (N = 27).

[b]Group means differed significantly at the .10 level.

*Significant at the .05 level.

Table 13. (Continued)

Record keeping ability	Group 1[a] Mean / S.D.	Group 2[a] Mean / S.D.	Group 3[a] Mean / S.D.	F-Ratio
Earn a proficiency award	9.65 / 4.65	8.95 / 3.72	9.89 / 3.88	0.33
Make management decisions	9.11 / 3.94	10.00 / 2.70	9.41 / 2.22	0.57
Budget for productive enterprises	8.52 / 4.46	9.00 / 3.30	8.81 / 2.90	0.13
Set efficiency goals	8.76 / 3.86	9.26 / 2.14	9.67 / 2.73	0.70
Improve my SOE program	8.96 / 3.53	9.48 / 1.86	9.96 / 2.68	0.99
Set goals for productive enterprises	9.06 / 3.50	9.61 / 1.90	9.74 / 2.25	0.57
Plan improvement projects	7.98 / 3.68	9.22 / 1.95	8.85 / 2.40	1.53
Select agricultural skills to develop	7.98 / 3.73	8.96 / 2.57	8.81 / 2.51	0.98
Prepare business agreements	7.71 / 3.52	7.57 / 3.36	8.33 / 2.80	0.42
Analyze livestock production costs	10.13 / 4.17	10.96 / 2.87	11.48 / 2.90	1.30
Analyze crop production costs	9.80 / 4.63	9.57 / 4.53	9.93 / 3.77	0.04
Record off-farm employment experiences	6.52 / 4.79	8.30 / 4.81	6.69 / 3.62	1.27
Compare goals and actual results	9.50 / 3.63	9.48 / 1.97	10.04 / 3.16	0.29
Measure overall SOE program success	9.22 / 3.63	9.96 / 3.15	10.30 / 2.28	1.07

Table 13. (Continued)

Record keeping ability	Group 1[a] Mean / S.D.	Group 2[a] Mean / S.D.	Group 3[a] Mean / S.D.	F-Ratio
Determine profit or loss	11.35 / 4.44	13.00 / 2.56	13.00 / 2.96	2.42
Obtain credit	6.80 / 5.25	7.13 / 5.07	7.15 / 4.86	0.05
Calculate depreciation	6.50 / 4.52	7.39 / 3.51	7.23 / 4.32	0.44
Calculate income tax	6.48 / 5.23	8.00 / 4.81	7.44 / 5.48	0.73

the highest ratings for the importance of SOE program record keeping in developing record keeping abilities on the following abilities: (1) determine profit or loss, (2) analyze livestock production costs, (3) keep useful records, (4) appreciate the value of records, and (5) maintain accurate records.

The five abilities receiving the highest ratings for students who received three or more instructor SOE visits per year were (1) determine profit or loss, (2) maintain up-to-date records, (3) keep useful records, (4) analyze livestock production costs, and (5) keep neat records.

Analysis by financial net worth of students

The means, standard deviations, and F-ratios for the 27 record

keeping abilities when students were grouped according to their financial net worth at high school graduation are reported in Table 14. The F-ratios observed were not significant at the .05 level. These findings revealed that no significant differences existed among students with a financial net worth at high school graduation of less than $3000, students who had a net worth which ranged from $3000 to $7000, and the group which listed a net worth of over $7000 at high school graduation on the importance of SOE program record keeping in developing selected record keeping abilities.

The five highest mean scores for students with a financial net worth at high school graduation of less than $3000 were observed for the following abilities: (1) determine profit or loss, (2) analyze livestock production costs, (3) appreciate the value of records, (4) maintain up-to-date records, and (5) keep useful records.

The five record keeping abilities receiving the highest ratings by students who indicated a financial net worth between $3000 and $7000 at high school graduation were: (1) determine profit or loss, (2) keep useful records, (3) analyze crop production costs, (4) attain a higher FFA degree, and (5) maintain accurate records.

The group of students with a net worth at high school graduation of over $7000 placed the highest ratings for the perceived importance of SOE program record keeping in developing record keeping abilities on the following abilities: (1) determine profit or loss, (2) maintain up-to-date records, (3) maintain accurate records, (4) keep useful records, and (5) attain a higher FFA degree.

Table 14. Means, standard deviations, and F-ratios for students' perceived importance of SOE record keeping in developing selected record keeping abilities by students' financial net worth at high school graduation.

Record keeping ability	Group 1[a] Mean / S.D.	Group 2[a] Mean / S.D.	Group 3[a] Mean / S.D.	F-Ratio
Appreciate the value of records	11.45 / 2.81	9.26 / 3.20	10.28 / 3.17	2.41
Cultivate initiative in record keeping	10.02 / 2.42	8.96 / 3.44	9.86 / 2.56	1.29
Maintain accurate records	10.74 / 3.27	9.96 / 3.36	11.00 / 2.94	0.80
Keep neat records	10.14 / 2.81	9.63 / 2.99	10.76 / 3.12	1.03
Keep useful records	10.95 / 2.93	10.33 / 2.96	10.86 / 2.77	0.40
Maintain up-to-date records	10.98 / 3.46	9.67 / 3.29	11.14 / 2.93	1.76
Meet Vo. Ag. teacher's requirement	10.19 / 3.78	8.95 / 3.54	8.62 / 4.47	1.43
Pass the Vo. Ag. course	8.76 / 3.62	7.44 / 3.96	7.03 / 4.19	1.93
Attain a higher FFA degree	8.71 / 4.84	10.04 / 4.80	10.79 / 3.34	1.99
Earn a proficiency award	8.95 / 4.19	9.67 / 4.33	10.21 / 4.09	0.79

[a]Group 1 = students with a financial net worth at high school graduation of less than $3000 (N = 42); Group 2 = students with a financial net worth at high school graduation of between $3001 and $7000 (N = 27); and Group 3 = students with a financial net worth at high school graduation greater than $7000 (N = 29).

Table 14. (Continued)

Record keeping ability	Group 1[a] Mean / S.D.	Group 2[a] Mean / S.D.	Group 3[a] Mean / S.D.	F-Ratio
Make management decisions	9.50 / 3.45	9.41 / 3.12	9.52 / 3.18	0.01
Budget for productive enterprises	8.90 / 3.75	8.52 / 4.20	8.83 / 3.48	0.09
Set efficiency goals	9.20 / 3.12	9.04 / 3.50	9.21 / 3.05	0.03
Improve my SOE program	9.50 / 2.66	9.19 / 3.53	9.38 / 2.86	0.09
Set goals for productive enterprises	9.71 / 2.81	8.81 / 3.31	9.45 / 2.37	0.84
Plan improvement projects	9.17 / 3.15	8.11 / 2.56	7.93 / 3.10	1.80
Select agricultural skills to develop	8.95 / 3.53	8.30 / 2.57	8.00 / 3.14	0.84
Prepare business agreements	8.24 / 3.90	7.31 / 2.85	7.45 / 2.84	0.79
Analyze livestock production costs	11.48 / 3.64	9.89 / 3.94	10.52 / 2.90	1.76
Analyze crop production costs	9.27 / 5.22	10.12 / 4.11	9.97 / 3.42	0.36
Record off-farm employment experiences	6.74 / 4.84	7.70 / 4.80	6.57 / 3.82	0.45
Compare goals and actual results	10.26 / 3.04	9.30 / 3.37	9.10 / 2.93	1.44
Measure overall SOE program success	9.69 / 3.58	9.74 / 3.24	9.66 / 2.50	0.01
Determine profit or loss	12.26 / 3.95	12.37 / 3.39	12.03 / 3.71	0.06

Table 14. (Continued)

Record keeping ability	Group 1[a] Mean / S.D.	Group 2[a] Mean / S.D.	Group 3[a] Mean / S.D	F-Ratio
Obtain credit	7.07 / 5.49	7.11 / 4.64	6.72 / 4.86	0.05
Calculate depreciation	6.86 / 4.59	7.22 / 3.45	6.82 / 4.32	0.08
Calculate income tax	6.55 / 5.44	6.52 / 4.73	8.72 / 5.17	1.83

Analysis by Agricultural Education 317A enrollment of students

Table 15 presents the means, standard deviations, and F-ratios for the 27 abilities when students were grouped according to their Agricultural Education 317A enrollment status. There were significant differences among the three groups on the perceived importance of SOE program record keeping in developing four of the 27 abilities. The means were significantly higher for students who had completed Agricultural Education 317A than for students who were enrolled in the course, for two abilities. These abilities were: (1) attain a higher FFA degree and (2) set goals for productive enterprises.

The group which had not enrolled in Agricultural Education 317A had a significantly higher mean than students who had completed Agricultural Education 317A for the ability, "pass the vocational agriculture course."

The means for students who had not enrolled in Agricultural Educa-

Table 15. Means, standard deviations, and F-ratios for students' perceived importance of SOE record keeping in developing selected record keeping abilities by Agricultural Education 317A enrollment status

Record keeping ability	Group 1[a] Mean / S.D.	Group 2[a] Mean / S.D.	Group 3[a] Mean / S.D.	F-Ratio
Appreciate the value of records	10.74 / 2.67	11.02 / 3.27	9.00 / 3.49	1.95
Cultivate initiative in record keeping	9.77 / 2.76	9.75 / 2.94	9.09 / 2.26	0.28
Maintain accurate records	10.28 / 2.77	11.00 / 3.61	10.00 / 2.61	0.76
Keep neat records	10.05 / 2.83	10.33 / 3.06	10.00 / 3.16	0.12
Keep useful records	10.85 / 2.36	10.79 / 3.31	10.27 / 2.72	0.84
Maintain up-to-date records	10.21 / 2.66	11.44 / 3.61	8.91 / 3.15	3.44* (2>3)[b]
Meet Vo. Ag. teacher's requirement	9.72 / 3.95	10.06 / 3.95	7.45 / 3.50	2.01
Pass the Vo. Ag. course	7.31 / 3.95	9.08 / 3.57	4.73 / 3.35	6.98** (2>3,1)[b]

[a]Group 1 = students who had completed Agricultural Education 317A (N = 39); Group 2 = students who had not enrolled in Agricultural Education 317A (N = 48); Group 3 = students who were enrolled in Agricultural Education 317A (N = 11).

[b]Group means differed significantly at the .10 level.

*Significant at the .05 level.

**Significant at the .01 level.

Table 15. (Continued)

Record keeping ability	Group 1[a] Mean / S.D.	Group 2[a] Mean / S.D.	Group 3[a] Mean / S.D.	F-Ratio
Attain a higher FFA degree	10.33 / 3.78	9.85 / 5.04	6.74 / 3.10	2.95 (1>3)[b]
Earn a proficiency award	9.90 / 3.71	9.60 / 4.77	7.82 / 2.75	1.08
Make management decisions	9.74 / 2.44	9.56 / 3.63	8.18 / 3.97	1.02
Budget for productive enterprises	9.18 / 2.92	8.73 / 3.90	7.55 / 5.61	0.81
Set efficiency goals	9.68 / 2.47	9.15 / 3.43	7.36 / 3.78	2.34
Improve my SOE program	10.28 / 2.62	8.85 / 2.94	8.45 / 3.53	3.27*
Set goals for productive enterprises	10.15 / 2.40	9.10 / 3.06	7.91 / 2.59	3.32* (1>3)[b]
Plan improvement projects	8.49 / 2.78	8.94 / 2.96	6.73 / 3.58	2.49 (2>3)[b]
Select agricultural skills to develop	8.87 / 3.02	8.46 / 3.25	7.27 / 3.35	1.10
Prepare business agreements	7.92 / 3.06	7.75 / 3.50	7.10 / 3.87	0.24
Analyze livestock production costs	10.77 / 2.77	10.90 / 3.54	10.10 / 5.80	0.23
Analyze crop production costs	9.71 / 3.76	9.46 / 4.78	10.90 / 5.13	0.44
Record off-farm employment experiences	7.02 / 4.71	6.71 / 4.29	7.60 / 5.32	0.17

Table 15. (Continued)

Record keeping ability	Group 1[a] Mean / S.D.	Group 2[a] Mean / S.D.	Group 3[a] Mean / S.D.	F-Ratio
Compare goals and actual results	9.77 / 2.41	9.73 / 3.44	8.91 / 4.01	0.35
Measure overall SOE program success	10.21 / 2.58	9.56 / 3.52	8.45 / 3.30	0.25
Determine profit or loss	12.74 / 2.83	12.00 / 4.10	11.36 / 4.59	0.77
Obtain credit	6.62 / 4.61	7.33 / 5.52	6.70 / 4.37	0.23
Calculate depreciation	6.50 / 3.19	7.21 / 5.05	7.36 / 3.08	0.36
Calculate income tax	6.44 / 4.88	7.92 / 5.57	6.64 / 4.76	0.93

tion 317A were significantly higher than those who were enrolled for two abilities. These abilities were: (1) maintain up-to-date records and (2) pass the vocational agriculture course.

The highest means observed for students who had completed Agricultural Education 317A were for the following abilities: (1) determine profit or loss, (2) keep useful records, (3) analyze livestock production costs, (4) appreciate the value of records, and (5) attain a higher FFA degree.

Group two, students who had not enrolled in Agricultural Education 317A, placed the five highest ratings on the following record

keeping abilities: (1) determine profit or loss, (2) maintain up-to-date records, (3) appreciate the value of records, (4) maintain accurate records, and (5) analyze livestock production costs.

The respondents who were enrolled in Agricultural Education 317A during data collection gave the highest ratings for the importance of SOE program record keeping in developing record keeping abilities for the following abilities: (1) determine profit or loss, (2) analyze crop production costs, (3) keep useful records, (4) analyze livestock production costs, and (5) maintain accurate records.

Analysis by semesters of vocational agriculture completed by students

Means, standard deviations and t-values for the abilities with students grouped by semesters of vocational agriculture completion are presented in Table 16. The t-values were not significant at the .05 level for any of the record keeping abilities. Thus it was concluded that no significant differences existed among the means of respondents who had completed less than eight semesters of vocational agriculture and the means of respondents who had completed eight or more semesters of vocational agriculture on the importance of SOE record keeping in developing record keeping abilities.

The five abilities rated the highest by students completing less than eight semesters of high school vocational agriculture were: (1) determine profit or loss, (2) appreciate the value of records, (3) analyze livestock production costs, (4) compare goals and actual results, and (5) maintain accurate records.

Table 16. Means, standard deviations, and t-values for students' perceived importance of SOE record keeping in developing selected record keeping abilities by semesters of vocational agriculture completed by students

Record keeping ability	Group 1[a] Mean / S.D.	Group 2[a] Mean / S.D	t-value
Appreciate the value of records	11.15 / 2.76	10.51 / 3.22	0.91
Cultivate initiative in record keeping	9.67 / 1.86	9.69 / 3.07	0.05
Maintain accurate records	10.19 / 2.88	10.76 / 3.31	0.80
Keep neat records	10.00 / 2.25	10.25 / 3.19	0.44
Keep useful records	9.85 / 2.33	11.10 / 3.00	1.94
Maintain up-to-date records	9.78 / 3.24	11.00 / 3.27	1.66
Meet Vo. Ag. teacher's requirement	9.63 / 3.86	9.63 / 4.01	0.00
Pass the Vo. Ag. course	8.30 / 4.63	7.73 / 3.65	0.63
Attain a higher FFA degree	9.00 / 5.37	9.96 / 4.10	0.94
Earn a proficiency award	8.66 / 4.91	9.85 / 3.88	1.25

[a]Group 1 = students who completed less than eight semesters of high school vocational agriculture (N = 27); Group 2 = students who completed eight or more semesters of high school vocational agriculture (N = 71).

Table 16. (Continued)

Record keeping ability	Group 1[a] Mean / S.D.	Group 2[a] Mean / S.D	t-value
Make management decisions	9.07 / 3.72	9.63 / 3.07	0.76
Budget for productive enterprises	7.67 / 4.56	9.20 / 3.36	1.59
Set efficiency goals	8.42 / 3.59	9.42 / 2.99	1.33
Improve my SOE program	9.26 / 3.43	9.42 / 2.78	0.24
Set goals for productive enterprises	9.07 / 3.40	9.51 / 2.60	0.67
Plan improvement projects	8.85 / 3.48	8.33 / 2.83	0.69
Select agricultural skills to develop	8.19 / 3.77	8.61 / 2.94	0.58
Prepare business agreements	7.78 / 4.18	7.74 / 2.99	0.04
Analyze livestock production costs	10.89 / 3.94	10.70 / 3.42	0.23
Analyze crop production costs	8.78 / 5.29	10.07 / 4.00	1.30
Record off-farm employment experiences	6.44 / 5.33	7.10 / 4.21	0.62
Compare goals and actual results	10.30 / 3.59	9.41 / 2.91	1.26
Measure overall SOE program success	9.74 / 4.11	9.68 / 2.76	0.08
Determine profit or loss	11.70 / 4.29	12.42 / 3.45	0.86

Table 16. (Continued)

Record keeping ability	Group 1[a] Mean / S.D.	Group 2[a] Mean / S.D.	t-value
Obtain credit	6.77 / 5.42	7.06 / 4.91	0.25
Calculate depreciation	6.85 / 5.27	6.99 / 3.73	0.12
Calculate income tax	5.85 / 6.06	7.69 / 4.82	1.57

Students who completed eight or more semesters of vocational agriculture placed the highest ratings on the perceived importance of SOE program record keeping in developing record keeping abilities for the following abilities: (1) determine profit or loss, (2) keep useful records, (3) maintain up-to-date records, (4) maintain accurate records, and (5) analyze livestock production costs.

Analysis by vocational agriculture course offering structure

Table 17 summarizes the data when the 27 record keeping abilities were analyzed according to the students' vocational agriculture course offering structure. No significant differences were detected in the means by the t-test at the .05 level between the two groups studied.

All but six of the mean ratings for the two groups for selected abilities were above the midpoint on the seventeen point scale. There was some similarity between the two groups in the abilities with the

Table 17. Means, standard deviations, and t-score values for students' perceived importance of SOE record keeping in developing selected record keeping abilities by school vocational agriculture course offering structure

Record keeping ability	Group 1[a] Mean / S.D.	Group 2[a] Mean / S.D.	t-value
Appreciate the value of records	10.78 / 3.08	10.36 / 3.23	0.55
Cultivate initiative in record keeping	9.54 / 2.89	10.18 / 2.36	0.95
Maintain accurate records	10.45 / 3.30	11.14 / 2.78	0.89
Keep neat records	10.13 / 3.00	10.36 / 2.87	0.32
Keep useful records	10.69 / 3.04	11.00 / 2.25	0.45
Maintain up-to-date records	10.46 / 3.39	11.36 / 2.89	1.14
Meet Vo. Ag. teacher's requirement	9.75 / 3.97	9.23 / 3.95	0.54
Pass the Vo. Ag. course	7.64 / 3.99	8.73 / 3.67	1.14
Attain a higher FFA degree	9.42 / 4.61	10.64 / 3.97	1.12
Earn a proficiency award	9.24 / 4.39	10.50 / 3.34	1.13
Make management decisions	9.30 / 3.22	10.09 / 3.37	1.00

[a]Group 1 = students with Vo. Ag. I, II, III, IV course offering structure (N = 76); Group 2 = students with other course offering structure (N = 22).

Table 17. (Continued)

Record keeping ability	Group 1[a] Mean / S.D.	Group 2[a] Mean / S.D.	t-value
Budget for productive enterprises	8.51 / 3.75	9.68 / 3.76	1.29
Set efficiency goals	8.95 / 3.08	9.86 / 3.48	1.19
Improve my SOE program	9.26 / 2.91	9.77 / 3.12	0.71
Set goals for productive enterprises	9.37 / 2.93	9.45 / 2.52	0.13
Plan improvement projects	8.55 / 2.84	8.36 / 3.61	0.26
Select agricultural skills to develop	8.57 / 2.81	8.23 / 4.26	0.35
Prepare business agreements	7.61 / 3.15	8.23 / 3.97	0.76
Analyze livestock production costs	10.74 / 3.58	10.82 / 3.57	0.09
Analyze crop production costs	9.86 / 4.42	9.18 / 4.46	0.64
Record off-farm employment experiences	6.65 / 4.55	7.86 / 4.40	1.08
Compare goals and actual results	9.63 / 3.00	9.73 / 3.56	0.13
Measure overall SOE program success	9.63 / 3.15	9.91 / 3.31	0.36
Determine profit or loss	12.27 / 3.72	12.05 / 3.67	0.26
Obtain credit	6.75 / 4.85	7.77 / 5.65	0.84

Table 17. (Continued)

Record keeping ability	Group 1[a] Mean / S.D.	Group 2[a] Mean / S.D.	t-value
Calculate depreciation	6.65 / 3.99	7.95 / 4.77	1.29
Calculate income tax	6.76 / 5.03	8.64 / 5.71	1.49

highest means. The students who were in a Vocational Agriculture I, II, III, IV course offering structure rated the following factors the highest: (1) determine profit or loss, (2) appreciate the value of records, (3) analyze livestock production costs, (4) keep useful records, and (5) maintain accurate records.

The five record keeping abilities with the highest means for the group from schools with a vocational agriculture course structure other than Vocational Agriculture I, II, III, IV such as semester courses were: (1) determine profit or loss, (2) maintain up-to-date records, (3) maintain accurate records, (4) keep useful records, and (5) analyze livestock production costs.

Analysis by most valued SOE of students

The means, standard deviations, and t-values for the 27 abilities when students were grouped according to their most valued SOE are reported in Table 18. There was a significant difference among the two groups of students for three of the 27 abilities. These abilities were:

Table 18. Means, standard deviations, and t-values for students' perceived importance of SOE record keeping in developing selected record keeping abilities by students' most valued SOE

Record keeping ability	Group 1[a] Mean / S.D.	Group 2[a] Mean / S.D.	t-value
Appreciate the value of records	11.03 / 3.02	9.61 / 3.26	1.93
Cultivate initiative in record keeping	9.92 / 2.49	8.91 / 3.57	1.26
Maintain accurate records	10.77 / 3.02	10.09 / 3.79	0.89
Keep neat records	10.26 / 2.78	9.70 / 3.32	0.81
Keep useful records	10.70 / 2.48	10.70 / 3.84	0.01
Maintain up-to-date records	10.54 / 3.04	10.96 / 4.07	0.53
Meet Vo. Ag. teacher's requirement	9.74 / 4.03	9.22 / 3.80	0.55
Pass the Vo. Ag. course	7.64 / 3.90	8.91 / 3.88	1.37
Attain a higher FFA degree	10.10 / 4.22	8.43 / 5.20	1.57
Earn a proficiency award	9.77 / 3.94	8.78 / 5.01	0.98
Make management decisions	9.58 / 3.07	9.22 / 3.90	0.46

[a]Group 1 = students with ownership as the most valued SOE (N = 74); Group 2 = students with SOE other than ownership as the most valued SOE (N = 23).

Table 18. (Continued)

Record keeping ability	Group 1[a] Mean / S.D.	Group 2[a] Mean / S.D.	t-value
Budget for productive enterprises	8.99 / 3.70	8.04 / 4.05	1.04
Set efficiency goals	9.49 / 2.89	8.00 / 3.92	1.95
Improve my SOE program	9.74 / 2.77	8.17 / 3.33	2.26*
Set goals for productive enterprises	9.76 / 2.49	8.17 / 3.58	1.98
Plan improvement projects	8.66 / 2.84	8.04 / 3.59	0.86
Select agricultural skills to develop	8.58 / 3.03	8.22 / 3.72	0.48
Prepare business agreements	8.04 / 3.11	6.91 / 3.98	1.42
Analyze livestock production costs	11.23 / 3.28	9.26 / 4.11	2.36*
Analyze crop production costs	10.33 / 4.13	7.74 / 4.88	2.51*
Record off-farm employment experiences	6.73 / 4.29	7.45 / 5.33	0.65
Compare goals and actual results	9.91 / 2.92	8.83 / 3.70	1.45
Measure overall SOE program success	10.05 / 2.84	8.57 / 3.95	1.68
Determine profit or loss	12.27 / 3.40	12.21 / 4.63	0.06

*Significant at the .05 level.

Table 18. (Continued)

Record keeping ability	Group 1[a] Mean / S.D.	Group 2[a] Mean / S.D.	t-value
Obtain credit	7.18 / 5.04	6.35 / 5.16	0.68
Calculate depreciation	7.15 / 4.18	6.30 / 4.32	0.84
Calculate income tax	7.20 / 5.04	7.04 / 5.98	0.13

(1) improve my SOE program, (2) analyze livestock production costs, and (3) analyze crop production costs. Thus, it may be concluded that the students with ownership SOE perceived their SOE program record keeping to be more important in improving their SOE program than students with other types of SOE.

The five abilities receiving the highest ratings from students listing ownership as their most valued SOE were: (1) determine profit or loss, (2) analyze livestock production costs, (3) appreciate the value of records, (4) maintain accurate records, and (5) keep useful records.

The five record keeping abilities with the highest means for the students who did not indicate ownership as their most valued SOE were: (1) determine profit or loss, (2) maintain up-to-date records, (3) keep

useful records, (4) maintain accurate records, and (5) keep useful records.

Analysis by home location of students

Table 19 reports the means, standard deviations, and t-values for the abilities when students were grouped according to their home location. A significant difference was observed between the two groups for the ability, "pass the vocational agriculture course." The ability had a mean of 10.00 for students who did not live on a farm. This was significantly higher at the .05 level than the 7.60 mean score for students who lived on a farm while in high school.

The students who lived on a farm while in high school placed the highest ratings for the importance of SOE program record keeping in developing record keeping abilities on the following abilities: (1) determine profit or loss, (2) keep useful records, (3) analyze livestock production costs, (4) appreciate the value of records, and (5) maintain accurate records.

The highest means observed for students who did not live on a farm while in high school were on the following abilities: (1) determine profit or loss, (2) maintain up-to-date records, (3) appreciate the value of records, (4) compare goals and actual results, and maintain accurate records.

Analysis by fathers' enrollment in vocational agriculture

The data for the 27 abilities when analyzed according to the fathers' enrollment in vocational agriculture are summarized in Table

Table 19. Means, standard deviations, and t-values for students' perceived importance of SOE record keeping in developing selected record keeping abilities by students' home location

Record keeping ability	Group 1[a] Mean / S.D.	Group 2[a] Mean / S.D.	t-value
Appreciate the value of records	10.58 / 3.13	11.42 / 2.88	0.87
Cultivate initiative in record keeping	9.55 / 2.76	10.67 / 2.84	1.31
Maintain accurate records	10.52 / 3.25	11.17 / 2.79	0.65
Keep neat records	10.11 / 3.03	10.67 / 2.39	0.60
Keep useful records	10.77 / 2.85	10.67 / 3.20	0.11
Maintain up-to-date records	10.45 / 3.29	12.17 / 3.01	1.71
Meet Vo. Ag. teacher's requirement	9.56 / 4.03	10.08 / 3.42	0.42
Pass the Vo. Ag. course	7.60 / 3.93	10.00 / 3.36	2.02*
Attain a higher FFA degree	9.95 / 4.34	7.83 / 5.22	1.55
Earn a proficiency award	9.52 / 4.07	9.50 / 5.20	0.02

[a]Group 1 = students who lived on farms (N = 86); Group 2 = students who did not live on farms (N = 12).

*Significant at the .05 level.

Table 19. (Continued)

Record keeping ability	Group 1[a] Mean / S.D.	Group 2[a] Mean / S.D.	t-value
Make management decisions	9.38 / 3.14	10.17 / 4.02	0.78
Budget for productive enterprises	8.55 / 3.78	10.42 / 3.40	1.63
Set efficiency goals	9.15 / 3.26	9.18 / 2.60	0.03
Improve my SOE program	9.21 / 3.00	10.58 / 2.31	1.52
Set goals for productive enterprises	9.36 / 2.93	9.58 / 2.07	0.25
Plan improvement projects	8.67 / 2.99	7.33 / 3.03	1.45
Select agricultural skills to develop	8.60 / 3.04	7.67 / 4.08	0.96
Prepare business agreements	8.00 / 3.12	6.00 / 4.35	1.97
Analyze livestock production costs	10.70 / 3.49	11.08 / 4.14	0.34
Analyze crop production costs	9.96 / 4.22	7.92 / 5.47	1.51
Record off-farm employment experiences	6.50 / 4.29	9.36 / 5.63	1.93
Compare goals and actual results	9.43 / 3.08	11.25 / 3.05	1.92
Measure overall SOE program success	9.52 / 3.23	10.92 / 2.47	1.44
Determine profit or loss	12.02 / 3.80	13.67 / 2.50	1.45

Table 19 (Continued)

Record keeping ability	Group 1[a] Mean / S.D.	Group 2[a] Mean / S.D.	t-value
Obtain credit	6.72 / 4.86	8.75 / 6.03	1.31
Calculate depreciation	6.82 / 4.12	7.83 / 4.75	0.78
Calculate income tax	7.02 / 5.11	8.33 / 6.07	0.81

20. Results of the t-tests indicated that the difference between the mean scores for the two groups was not significant at the .05 level for any of the abilities.

There was similarity among the two groups in the abilities with the highest means. The students whose fathers were former vocational agriculture students rated the following abilities the highest: (1) determine profit or loss, (2) analyze livestock production costs, (3) keep useful records, (4) maintain up-to-date records, and (5) maintain accurate records.

The five record keeping abilities with the highest means for students whose fathers were not former vocational agriculture students were: (1) determine profit or loss, (2) appreciate the value of records, (3) maintain accurate records, (4) maintain up-to-date re-

Table 20. Means, standard deviations, and t-values for students' perceived importance of SOE record keeping in developing selected record keeping abilities by fathers' enrollment in Vo. Ag.

Record keeping ability	Group 1[a] Mean / S.D.	Group 2[a] Mean / S.D.	t-value
Appreciate the value of records	9.88 / 2.95	10.96 / 3.14	1.49
Cultivate initiative in record keeping	9.29 / 3.19	9.83 / 2.69	0.82
Maintain accurate records	10.21 / 3.46	10.71 / 3.07	0.67
Keep neat records	10.08 / 3.22	10.24 / 2.92	0.22
Keep useful records	10.92 / 2.89	10.67 / 2.84	0.37
Maintain up-to-date records	10.50 / 2.87	10.68 / 3.41	0.23
Meet Vo. Ag. teacher's requirement	8.33 / 3.95	10.00 / 3.86	1.82
Pass the Vo. Ag. course	7.71 / 4.36	7.83 / 3.74	0.14
Attain a higher FFA degree	8.79 / 4.08	9.90 / 4.60	1.05
Earn a proficiency award	9.38 / 3.56	9.50 / 4.40	0.13
Make management decisions	9.75 / 3.04	9.35 / 3.37	0.52

[a]Group 1 = students' father a former Vo. Ag. student (N = 24); students' father not a former vocational agriculture student (N = 72).

Table 20. (Continued)

Record keeping ability	Group 1[a] Mean / S.D.	Group 2[a] Mean / S.D.	t-value
Budget for productive enterprises	9.46 / 3.58	8.72 / 3.71	0.85
Set efficiency goals	9.42 / 3.13	9.21 / 3.06	0.28
Improve my SOE program	9.38 / 2.98	9.57 / 2.74	0.29
Set goals for productive enterprises	9.83 / 2.18	9.39 / 2.84	0.70
Plan improvement projects	8.63 / 3.32	8.46 / 2.96	0.23
Select agricultural skills to develop	8.21 / 3.34	8.58 / 3.18	0.49
Prepare business agreements	6.75 / 3.67	8.08 / 3.22	1.69
Analyze livestock production costs	11.17 / 3.94	10.63 / 3.48	0.64
Analyze crop production costs	9.61 / 5.53	9.72 / 4.10	0.10
Record off-farm employment experiences	6.13 / 4.78	7.35 / 4.39	1.13
Compare goals and actual results	9.38 / 3.10	9.88 / 2.96	0.71
Measure overall SOE program success	9.08 / 3.28	10.06 / 2.93	1.37
Determine profit or loss	11.75 / 4.53	12.28 / 3.40	0.60
Obtain credit	6.38 / 5.05	7.24 / 5.03	0.73

Table 20. (Continued)

Record keeping ability	Group 1[a] Mean / S.D.	Group 2[a] Mean / S.D.	t-value
Calculate depreciation	6.33 / 3.57	7.21 / 4.34	0.89
Calculate income tax	6.50 / 5.28	7.47 / 5.21	0.79

cords, and (5) keep useful records.

Analysis by highest FFA degree students

Table 21 presents the mean , standard deviations, and t-values for the 27 abilities when students were grouped according to their highest FFA degree. There were significant differences between the two groups on the perceived importance of SOE program record keeping in developing six of the 27 abilities.

Students who had attained the American Farmer or State Farmer degree rated the six abilities significantly higher than students who had not attained a degree beyond the Chapter Farmer level. These abilities were: (1) attain a higher FFA degree, (2) earn a proficiency award, (3) measure overall SOE program success, (4) set goals for productive enterprises, (5) calculate income tax, and (6) maintain up-to-date records.

The five abilities receiving the highest mean ratings for students

Table 21. Means, standard deviations, and t-values for students' perceived importance of SOE record keeping in developing selected record keeping abilities by students' highest FFA degree

Record keeping ability	Group 1[a] Mean / S.D.	Group 2[a] Mean / S.D.	t-value
Appreciate the value of records	10.65 / 3.01	10.72 / 3.23	0.12
Cultivate initiative in record keeping	9.27 / 2.66	10.13 / 2.87	1.53
Maintain accurate records	10.08 / 3.12	11.17 / 3.20	1.71
Keep neat records	10.02 / 3.24	10.36 / 2.63	0.57
Keep useful records	10.37 / 3.12	11.17 / 2.55	1.33
Maintain up-to-date records	10.04 / 3.57	11.34 / 2.85	1.99*
Meet Vo. Ag. teacher's requirement	9.33 / 3.70	9.58 / 4.22	0.78
Pass the Vo. Ag. course	7.78 / 4.01	8.00 / 3.83	0.27
Attain a higher FFA degree	7.55 / 4.46	12.02 / 3.18	5.75**

[a]Group 1 = students who received no degree beyond the Chapter Farmer degree (N = 51); Group 2 = students who received State Farmer or American Farmer degree (N = 47).

*Significant at the .05 level.

**Significant at the .01 level.

Table 21. (Continued)

Record keeping ability	Group 1[a] Mean / S.D.	Group 2[a] Mean / S.D.	t-value
Earn a proficiency award	8.33 / 4.33	10.81 / 3.67	3.04**
Make management decisions	9.12 / 3.44	9.87 / 3.02	1.15
Budget for productive enterprises	8.45 / 3.86	9.13 / 3.66	0.89
Set efficiency goals	8.60 / 3.18	9.74 / 3.10	1.79
Improve my SOE program	9.00 / 2.98	9.78 / 2.90	1.32
Set goals for productive enterprises	8.82 / 3.04	10.00 / 2.47	2.09*
Plan improvement projects	8.45 / 3.09	8.57 / 2.96	0.20
Select agricultural skills to develop	8.53 / 3.40	8.45 / 2.96	0.13
Prepare business agreements	7.72 / 3.86	7.79 / 2.73	0.10
Analyze livestock production costs	10.68 / 4.10	10.87 / 2.88	0.32
Analyze crop production costs	9.14 / 4.74	10.33 / 4.00	1.32
Record off-farm employment experiences	6.60 / 4.72	7.32 / 4.32	0.70
Compare goals and actual results	9.49 / 3.39	9.83 / 2.83	0.54
Measure overall SOE program success	9.00 / 3.52	10.45 / 2.56	2.34*

Table 21. (Continued)

Record keeping ability	Group 1[a] Mean / S.D.	Group 2[a] Mean / S.D.	t-value
Determine profit or loss	11.67 / 4.09	12.83 / 3.14	1.57
Obtain credit	6.70 / 5.02	7.28 / 5.07	0.56
Calculate depreciation	6.75 / 4.12	7.17 / 4.29	0.50
Calculate income tax	6.18 / 5.12	8.28 / 5.16	2.02*

who held the Chapter Farmer degree or below were: (1) determine profit or loss, (2) analyze livestock production costs, (3) appreciate the value of records, (4) keep useful records, and (5) maintain accurate records.

The highest means observed for the students who attained the American Farmer or State Farmer degree were on the following abilities: (1) determine profit or loss, (2) attain a higher FFA degree, (3) maintain up-to-date records, (4) keep useful records, and (5) maintain accurate records.

Analysis by Economics 230 enrollment status of students

Means, standard deviations, and t-values for the abilities when students were grouped according to Economics 230 enrollment status are

presented in Table 22.

Significant differences were observed between the two groups of students on the perceived importance of SOE program record keeping in developing record keeping abilities for only one of the 27 abilities. Group two, students who had not completed Economics 230, had a significantly higher mean than Group one, students who had completed or were enrolled in Economics 230, for the ability, "maintain up-to-date records."

The mean ratings for the importance of SOE program record keeping in developing record keeping abilities ranged from 6.73 to 12.71 among the students grouped according to their Economics 230 completion. Based on the mean scores, the two groups of students were in agreement in ranking four of the top five abilities. These abilities were: (1) determine profit or loss, (2) keep useful records, (3) appreciate the value of records, and (4) maintain up-to-date records.

Analysis by occupational plans of students

Table 23 summarizes the data when the 27 abilities were analyzed according to the occupational plans of students. The t-test detected one significant difference at the .05 level between the mean scores for the two groups for one ability. The mean score of 10.61 for the students who planned to teach vocational agriculture was significantly higher than the 9.47 mean score for students who did not plan to teach vocational agriculture for the ability, "keep neat records."

There was some similarity between the abilities with the highest

Table 22. Means, standard deviations, and t-values for students' perceived importance of SOE record keeping in developing selected record keeping abilities by students' Economics 230 enrollment status

Record keeping ability	Group 1[a] Mean / S.D.	Group 2[a] Mean / S.D.	t-value
Appreciate the value of records	10.32 / 2.76	12.00 / 3.96	1.83
Cultivate initiative in record keeping	9.50 / 2.56	10.48 / 3.44	1.43
Maintain accurate records	10.28 / 2.82	11.95 / 4.08	1.77
Keep neat records	10.08 / 2.81	10.67 / 3.47	0.80
Keep useful records	10.61 / 2.59	11.33 / 3.76	0.80
Maintain up-to-date records	10.25 / 2.82	12.33 / 4.29	2.10*
Meet Vo. Ag. teacher's requirement	9.50 / 3.96	10.19 / 4.05	0.70
Pass the Vo. Ag. course	7.50 / 3.89	9.29 / 3.91	1.86
Attain a higher FFA degree	9.92 / 4.38	8.95 / 5.29	0.87
Earn a proficiency award	9.51 / 4.14	9.62 / 4.56	0.10

[a]Group 1 = students who completed or were enrolled in Economics 230 (N = 76); Group 2 = students not yet enrolled in Economics 230 (N = 21).

*Significant at the .05 level.

Table 22. (Continued)

Record keeping ability	Group 1[a] Mean / S.D.	Group 2[a] Mean / S.D.	t-value
Make management decisions	9.34 / 3.18	9.95 / 3.61	0.76
Budget for productive enterprises	8.61 / 3.89	9.33 / 3.42	0.76
Set efficiency goals	9.14 / 3.17	9.19 / 3.37	0.06
Improve my SOE program	9.52 / 2.96	8.86 / 3.01	0.91
Set goals for productive enterprises	9.51 / 2.83	8.95 / 2.94	0.80
Plan improvement projects	8.39 / 3.06	8.86 / 2.94	0.62
Select agricultural skills to develop	8.29 / 3.26	9.19 / 2.87	1.15
Prepare business agreements	7.87 / 3.27	7.29 / 3.69	0.70
Analyze livestock production costs	11.03 / 3.27	9.81 / 3.69	1.39
Analyze crop production costs	9.88 / 4.35	9.10 / 4.82	0.71
Record off-farm employment experiences	6.96 / 4.50	6.86 / 4.80	0.09
Compare goals and actual results	9.37 / 3.06	10.62 / 3.26	1.63
Measure overall SOE program success	9.66 / 3.22	9.86 / 3.12	0.25
Determine profit or loss	12.12 / 3.69	12.71 / 3.82	0.65

Table 22. (Continued)

Record keeping ability	Group 1[a] Mean / S.D.	Group 2[a] Mean / S.D.	t-value
Obtain credit	6.81 / 4.79	7.61 / 5.92	0.76
Calculate depreciation	6.73 / 4.09	7.90 / 4.50	1.14
Calculate income tax	7.16 / 5.13	7.48 / 5.72	0.25

means. The students who planned to teach vocational agriculture after university graduation rated the following abilities the highest: (1) determine profit or loss, (2) keep useful records, (3) maintain accurate records, (4) maintain up-to-date records, and (5) appreciate the value of records.

Students who did not plan to teach vocational agriculture rated the top five abilities as follows: (1) determine profit or loss, (2) analyze livestock production costs, (3) analyze crop production costs, (4) keep useful records, and (5) appreciate the value of records.

Table 23. Means, standard deviations, and t-values for students' perceived importance of SOE record keeping in developing selected record keeping abilities by students' occupational plans

Record keeping ability	Group 1[a] Mean / S.D.	Group 2[a] Mean / S.D.	t-value
Appreciate the value of records	10.89 / 3.42	10.28 / 2.49	1.01
Cultivate initiative in record keeping	9.72 / 2.93	9.58 / 2.58	0.23
Maintain accurate records	10.97 / 3.32	9.92 / 2.91	1.57
Keep neat records	10.61 / 3.23	9.47 / 2.34	2.00*
Keep useful records	10.98 / 3.13	10.36 / 2.43	1.02
Maintain up-to-date records	10.93 / 3.38	10.06 / 3.01	1.29
Meet Vo. Ag. teacher's requirement	10.18 / 3.94	8.89 / 3.78	1.58
Pass the Vo. Ag. course	8.20 / 3.95	7.36 / 3.95	1.01
Attain a higher FFA degree	9.79 / 4.13	9.81 / 4.35	0.02
Earn a proficiency award	9.66 / 4.13	9.42 / 4.35	0.27

[a]Group 1 = students who planned to teach vocational agriculture (N = 61); Group 2 = students who planned to enter other occupations (N = 36).

*Significant at the .05 level.

Table 23. (Continued)

Record keeping ability	Group 1[a] Mean / S.D.	Group 2[a] Mean / S.D.	t-value
Make management decisions	9.44 / 3.57	9.44 / 2.66	0.00
Budget for productive enterprises	9.02 / 4.27	8.33 / 2.79	0.95
Set efficiency goals	8.95 / 3.61	9.50 / 2.35	0.90
Improve my SOE program	9.41 / 3.23	9.33 / 2.51	0.12
Set goals for productive enterprises	9.30 / 3.22	9.58 / 2.08	0.48
Plan improvement projects	8.36 / 3.16	8.83 / 2.76	0.74
Select agricultural skills to develop	8.39 / 3.41	8.53 / 2.71	0.20
Prepare business agreements	7.52 / 3.29	8.37 / 3.17	1.23
Analyze livestock production costs	10.54 / 3.90	11.06 / 2.94	0.69
Analyze crop production costs	9.58 / 4.42	10.37 / 4.16	0.97
Record off-farm employment experiences	7.02 / 4.87	6.81 / 3.92	0.20
Compare goals and actual results	9.48 / 3.51	9.97 / 2.38	0.83
Measure overall SOE program success	9.75 / 3.35	9.64 / 2.92	0.17
Determine profit or loss	11.93 / 4.24	12.69 / 3.08	0.97

Table 23. (Continued)

Record keeping ability	Group 1[a] Mean / S.D.	Group 2[a] Mean / S.D.	t-value
Obtain credit	6.88 / 4.87	7.03 / 5.37	0.14
Calculate depreciation	6.97 / 4.18	6.91 / 4.31	0.06
Calculate income tax	7.13 / 5.04	7.03 / 5.46	0.09

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

This study was designed to determine how important undergraduate students in Agricultural Education thought their vocational agriculture supervised occupational experience (SOE) record keeping was in developing record keeping abilities.

Agricultural Education majors at Iowa State University during Winter Quarter, 1978, who had vocational agriculture in high school served as the population for this research. A stratified random sample of 100 students was identified to particpate in the study. A total of 98 students responded properly to the data collection procedures.

A two-part questionnaire was developed to collect biographical data about the respondents and to determine how important students thought their SOE program record keeping was in developing record keeping abilities. The data were collected by mailed questionnaires during January and February, 1978.

The data were analyzed to: (1) determine if significant relationships existed between selected biographical data, and (2) determine if significant differences existed in the perceived importance of SOE program record keeping in developing record keeping abilities among students grouped according to university classification, vocational agriculture classroom hours per month devoted to SOE records, number of instructor SOE visits, financial net worth, Agricultural Education 317A enrollment, semesters of vocational agriculture completed, voca-

tional agriculture course offering structure, most valued SOE, home location, fathers' vocational agriculture enrollment, highest FFA degree, Economics 230 enrollment, and occupational plans.

Conclusions

The conclusions of this study are as follows:

1. The following biographical characteristics of the respondents were observed:
   a. Seven out of ten (72.4 percent) of the respondents completed eight or more semesters of vocational agriculture.
   b. The students were allotted an average of 2.7 hours per month for instruction and work on SOE records while enrolled in high school vocational agriculture.
   c. Over 70 percent of the students were expected to keep the following types of SOE records: (1) income/expense, (2) improvement project, (3) agricultural skills, and (4) goals. Less than half of the respondents were expected to keep budget and monthly plans records.
   d. Those participating in the study received an average of 2.3 instructor SOE visits per year.
   e. Over three-fourths (77.6 percent) of the respondents were enrolled in a high school Vocational Agriculture I, II, III, IV course offering sequence.
   f. Nearly nine out of ten (87.7 percent) of the students surveyed lived on a farm while in vocational agriculture.

g. Less than one-fourth (24.5 percent) of the respondents' fathers were former vocational agriculture students.

h. Almost one-half (48.0 percent) of the students had attained the State Farmer or American Farmer degree.

i. Students who indicated a financial net worth at the time of high school graduation of less than $3000 comprised 42.8 percent of the sample. Nearly one-third (29.7 percent) reported a financial net worth at their high school graduation of over $7000.

j. Over 60 percent (62.2 percent) planned to teach vocational agriculture after graduation from Iowa State University. The remainder planned to enter agriculturally related occupations.

k. Almost 93 percent of the students participated in a supervised farming program while enrolled in vocational agriculture.

l. Three-fourths (75.5 percent) of the respondents reported supervised farming programs as their most valued SOE.

m. One in five (21.4 percent) of the students indicated cooperative farm or agribusiness placement as their most valued SOE.

2. The five highest mean ratings for perceived importance of SOE program record keeping in developing record keeping abilities were received by the following abilities:

a. Determine profit or loss.

b. Analyze livestock production costs.

c. Keep useful records.

d. Maintain up-to-date records.

e. Maintain accurate records.

3. Results of an analysis of variance revealed that significant differences existed among the means for students grouped according to university classification on the importance of SOE program record keeping in developing four of the 27 record keeping abilities studied. Using the Scheffé Test at the .10 level, significant differences between all possible pairs of group means were identified. The means for freshmen were significantly higher than the means for the sophomore, junior, and senior groups for the following abilities:

   a. Maintain up-to-date records.

   b. Pass the vocational agriculture course.

   The freshmen also indicated significantly higher means than the sophomores and juniors on two abilities. These abilities were:

   a. Maintain accurate records.

   b. Earn a proficiency award.

4. Means for students grouped by classroom hours per month devoted to SOE records differed significantly on the importance of SOE program record keeping in developing record keeping abilities for six of the 27 abilities. Students who spent two

classroom hours per month on SOE records had significantly higher means than students who spent one or less hours per month on SOE records for the following abilities:

a. Attain a higher FFA degree.

b. Earn a proficiency award.

c. Analyze crop production costs.

Students who spent two hours per month on SOE records rated the importance of one ability, "earn a proficiency award," significantly higher than students who devoted four classroom hours per month to SOE records.

Students who spent three classroom hours per month on SOE records had a significantly higher group mean than students who spent one hour or less on SOE records for two abilities. These abilities were:

a. Plan improvement projects.

b. Select agricultural skills to develop.

The means for students who spent four classroom hours per month on SOE records were significantly higher than for students who were allotted one or less classroom hour per month for instruction and work on SOE records for the ability "maintain accurate records."

The group that spent five or more classroom hours per month on SOE records indicated a significantly higher mean than students who spent one or less hours per month on SOE records on the ability, "analyze crop production costs."

These findings suggest that there may be an optimum number of hours which should be devoted to SOE records to maximize development of record keeping abilities.

5. An analysis of variance revealed a significant difference among mean ratings by students grouped according to number of instructor SOE visits received per year for only one of the record keeping abilities studied. Students receiving three or more instructor SOE visits per year indicated a significantly higher mean than students who received two instructor SOE visits per year on the ability, "keep neat records." These findings indicate that the number of SOE visits students receive per year may not affect their development of some record keeping abilities.
6. The analysis of variance revealed that no significant differences existed among mean responses for students grouped according to financial net worth at the time of high school graduation in their perceived importance of SOE program record keeping in developing the 27 record keeping abilities studied. These findings imply that the financial net worth of students at high school graduation did not influence the development of the selected record keeping abilities.
7. Students grouped by their Agricultural Education 317A enrollment differed significantly in their perceived importance of their SOE program record keeping in developing record keeping abilities for four of the 27 abilities. Students who had

completed Agricultural Education 317A had significantly higher means than students who were currently enrolled in the course for the following abilities:

a. Attain a higher FFA degree.

b. Set goals for productive enterprises.

The group which had not enrolled in Agricultural Education 317A indicated a significantly higher mean than students who had completed Agricultural Education 317A for the ability, "pass the vocational agriculture course."

Students who had not enrolled in Agricultural Education 317A rated the importance of the following two abilities significantly higher than students who were enrolled in the course:

a. Maintain up-to-date records.

b. Pass the vocational agriculture course.

8. An analysis of variance revealed that no significant differences existed between mean responses of students who had completed less than eight semesters and those who had completed eight or more semesters of vocational agriculture for the perceived importance of SOE program record keeping in developing record keeping abilities.

9. There were no significant differences between mean ratings for the importance of SOE program record keeping in developing record keeping abilities between students enrolled in a Vocational Agriculture I, II, III, IV course sequence and those

enrolled in semester or other course sequence.

10. An analysis of variance revealed a significant difference between mean ratings by students who indicated ownership as their most valued SOE and students with other types of most valued SOE for three of the record keeping abilities studied. These abilities were:
    a. Improve my SOE program.
    b. Analyze livestock production costs.
    c. Analyze crop production costs.

    These findings imply that students with ownership SOE perceived their SOE program record keeping to be more important in improving their SOE program than students with other types of SOE. Significant differences for the latter two abilities were expected. These abilities are more commonly developed in ownership SOE than with other types of SOE.
11. There were no significant differences among the mean responses of students grouped according to home location on the importance of SOE program record keeping in developing record keeping abilities for 26 of the 27 record keeping abilities studied. These findings suggest that students living on a farm or off a farm may be equally able in developing some record keeping abilities.
12. An analysis of variance revealed that no significant differences existed between means for students grouped according to

their fathers' past enrollment in vocational agriculture on the respondents perceived importance of SOE program record keeping in developing record keeping abilities.

13. The means of students grouped by their highest FFA degree differed significantly in their perceived importance of SOE for six of the 27 abilities studied. Students who had attained the American Farmer or State Farmer degree had significantly higher means than students who had not attained a degree beyond the Chapter Farmer level for the following abilities:
    a. Attain a higher FFA degree.
    b. Earn a proficiency award.
    c. Measure overall program success.
    d. Set goals for productive enterprises.
    e. Calculate income tax.
    f. Maintain up-to-date records.

    These findings indicate that students with State Farmer or American Farmer degrees viewed SOE program record keeping to be more important in developing record keeping abilities than students with no degree beyond the Chapter Farmer level for some abilities. This was expected because SOE records serve a major role in determining State Farmer or American Farmer recipients.
14. There were no significant differences between mean responses of students grouped according to their Economics 230 enrollment status on the importance of SOE program record keeping in developing record keeping abilities for all but one of the 27

abilities. These findings suggest that Economics 230 enrollment does not influence students' perceived importance of their SOE program record keeping in developing record keeping abilities.

15. Results of an analysis of variance disclosed that a significant difference existed between the means for students who planned to teach vocational agriculture and those who planned to enter other occupations upon graduation from Iowa State University in developing only one of the 27 abilities studied. Using the Scheffé (1) Test. The ability "keep neat records" was found to have significantly higher means for those who planned to teach vocational agriculture than for those who planned to enter other occupations.

Recommendations

The findings of this study revealed similarities and differences among groups of students on the importance of SOE program record keeping in developing record keeping abilities. The following recommendations, preceded by the findings of this study, appear worthy of consideration by personnel responsible for supervision and operation of vocational agriculture programs in local high schools, and by personnel responsible for preservice and inservice vocational agriculture teacher education.

1. Significant differences existed among mean ratings for students grouped according to the number of hours per month devoted to instruction and work on SOE records in developing some record keeping abilities.

a. Classroom time should be specifically allotted for instruction on SOE records.
b. Students should receive classroom time to maintain and update their SOE records.
c. Teachers should possess competencies in SOE record keeping to effectively utilize classroom time devoted to SOE records.

2. Similarities existed among means of students grouped according to the number of instructor SOE visits received per year. Only one significant difference was observed.
   a. Teachers should include individualized record keeping instruction and evaluation as a purpose for SOE visitations.
   b. Preservice and inservice education should be provided for vocational agriculture instructors in utilizing SOE visits for SOE records instruction and evaluation.
3. Less than one half of the students were expected to keep budget or monthly plans records on their SOE programs.
   a. Teachers should possess competencies in budgeting.
   b. Instructional materials developed for use in teaching students to develop and conduct SOE programs should emphasize the importance of advance planning.
   c. Previous student records should be used as a basis for development of SOE program budgets.
4. Students indicated that their SOE program record keeping was important in developing record keeping abilities.

a. All students should maintain records on their SOE programs.
b. Instructors should include in the program of study systematic instruction on SOE records and record keeping.

5. No significant differences were found among mean ratings of students grouped according to their financial net worth at the time of their high school graduation on their perceived importance of SOE program record keeping in developing record keeping abilities.
   a. Teachers should provide instruction on uses of SOE records to the students in development and expansion of their SOE.
6. Mean responses for students grouped according to semesters of vocational agriculture completion revealed no significant differences among the 27 record keeping abilities studied.
   a. Teachers should provide instruction on SOE program record keeping for all classes of vocational agriculture.
   b. Teachers should utilize records as a means of evaluating SOE programs throughout students' vocational agriculture programs.
   c. Teachers should provide instruction for beginning vocational agriculture students in long range planning of SOE programs.
7. Significant differences existed between means for respondents who had attained the State Farmer or American Farmer degree and those who did not attain an FFA degree beyond the Chapter Farmer level on the importance of SOE program record keeping

in developing some record keeping skills.

a. Teachers should guide students to use SOE program records as a means to attain a higher FFA degree or proficiency award.

b. Teachers should utilize FFA awards as student motivation for keeping SOE program records.

8. Students indicated that their SOE program records were not important in obtaining credit, calculating depreciation, and calculating income tax. All mean ratings were below the mid-point on a 17 point scale.

a. Teachers should emphasize the value of accurate records to students.

b. Teachers should provide instruction on proper utilization of SOE program records to develop these abilities.

9. Over half (62.2 percent) of the students planned to teach vocational agriculture after graduation from Iowa State University.

a. Personnel responsible for preservice vocational agriculture teacher education should provide students with instruction on the philosophy of record keeping as well as the mechanics of SOE program record keeping.

10. Little research has been conducted on attitudes toward SOE program record keeping. Further research should be conducted to:

a. Measure teacher attitudes toward SOE program record keeping.

b. Measure senior vo. ag. students attitudes toward SOE program record keeping.

c. Analyze effectiveness of SOE program records for students with employment SOE.

d. Determine the role of SOE program record keeping in SOE as well as in the overall vocational agriculture program of students.

LITERATURE CITED

1. Binkley, Harold, and Carsie Hammonds. 1970. Experience programs for learning vocations in agriculture. The Interstate Printers and Publishers, Inc., Danville, Illinois.

2. Bjoraker, Walter T. 1972. A course of study in farm management. Instructional Series Number 4. Department of Agricultural and Extension Education, University of Wisconsin, Madison, Wisconsin.

3. Borg, Walter R., and Meredith D. Gall. 1976. Educational research: an introduction. David McKay Company, Inc., New York.

4. Bundy, Clarence E. 1957. Supervised farming program responsibilities in teacher education. Agricultural Education Magazine 29(11):249.

5. Deyoe, George P. 1953. Farming programs in vocational agriculture. The Interstate Printers and Publishers, Inc., Danville, Illinois.

6. Duncan, A. O., and G. E. Toban. 1966. A guide on record keeping and analysis in the vocational agriculture record book for production agriculture. University of Georgia, Athens, Georgia.

7. Eicken, Arthur L. 1973. Career education: Supervised agricultural experience programs. Agricultural Education 45(11):252-253.

8. Ferguson, George A. 1971. Statistical analysis in psychology and education. McGraw-Hill Book Company, New York.

9. Iowa State University. 1977. General catalog. Iowa State University, Ames, Iowa.

10. Kahler, Alan A. 1974. Organizational and instructional problems of beginning teachers of vocational agriculture. Department of Agricultural Education. Iowa State University, Ames, Iowa.

11. Kruskop, LeRoy L. 1966. Competencies in farm management needed by vocational agriculture instructors. Unpublished M.S. Thesis. Library, Iowa State University, Ames, Iowa.

12. Leske, Gary W. 1974. Production goals process: Means and end. Agricultural Education Magazine 46(10):224,225.

13. Nie, N. H., C. H. Hull, J. G. Jenkins, Karin Steinbrenner, and Dale Bert. 1975. Statistical Package for Social Sciences. McGraw-Hill Book Company, New York.

14. Pearce, Frank C. 1965. Experience program better than supervised farming program. Agricultural Education Magazine 38(3):60.

15. Phipps, Lloyd J. 1966. Handbook on agricultural education in public schools. The Interstate Printers and Publishers, Inc., Danville, Illinois.

16. Ross, W. A., and D. M. Clements. 1944. Directing vocational agriculture day students in developing their farming program. U.S. Government Printing Office, Washington, D.C.

17. Schmidt, G. A. 1932. Responsibilities of the teacher in supervising projects. Agricultural Education Magazine 5(6):85-86.

18. Smith, Hoke, and Dudley Mays Hughes. 1917. Vocational education act of 1917. United States Code. U.S. Government Printing Office, Washington, D.C.

19. Snell, John A. 1957. Record keeping - a chore or opportunity. Agricultural Education Magazine 29(9):195, 199.

20. U.S. Office of Education. 1966. Classification of agricultural occupations for reporting purposes. U.S. Government Printing Office, Washington, D.C.

21. U.S. Office of Education. 1967. Developing supervised occupational experience in agriculture. U.S. Government Printing Office, Washington, D.C.

22. Ward, Ted W. 1972. Public supported instruction in economics of farm business management in Iowa. Unpublished Ph.D. Dissertation. Library, Iowa State University, Ames, Iowa.

23. Warren, Richard D., Gerald E. Klonglan, and Medhat M. Sabri. 1969. The certainty method: its application and usefulness in developing empirical measures in social sciences. Rural Sociology Report No. 82. Department of Sociology and Anthropology, Iowa State University, Ames, Iowa.

24. Webb, Earl S. 1970. Teachers' problems in conducting supervised farming programs. Agricultural Education Magazine 42(10): 258-259.

25. Weigers, G. W. 1958. Providing on farm instruction. Agricultural Education Magazine 30(12):277.

26. Williams, David L. 1977. A study of supervised occupational experience programs of Iowa vocational agriculture students. Department of Agricultural Education, Iowa State University, Ames, Iowa.

27. Woodin, Ralph J. 1967. Occupational experience in agricultural education. American Vocational Journal 42(6):27.

ACKNOWLEDGMENTS

The author wishes to express his sincere gratitude for the assistance and cooperation rendered by those who have made the completion of this study possible.

Special appreciation is due to Dr. David L. Williams for his interest, advice, and cooperation in serving as major professor and chairman of the examining committee.

The author is also grateful to Dr. Bennie L. Byler for his guidance and assistance in serving as major professor until his resignation from Iowa State University.

Special thanks are due to Drs. Harold Crawford, Thomas Hoerner, and John Schafer for their helpful suggestions and constructive criticisms while serving as members of the examining committee.

Appreciation is extended to Mr. Gary Briers of the Agricultural Education Department, for his assistance in analyzing the data.

The author wishes to express his sincere appreciation to other staff members and the graduate students in the Agricultural Education Department at Iowa State University for their constructive criticisms during the design of the questionnaire.

Special thanks are also due to Elaine Carlson for her work in the preliminary and final typing of the thesis.

The questionnaire and other research procedures used in this study were approved by the Iowa State University Human Subjects Review Committee.

APPENDIX A. QUESTIONNAIRE

Department of Agricultural Education

104

Iowa State University

Ames, Iowa

Respondent No. _____

SURVEY ON SUPERVISED OCCUPATIONAL EXPERIENCE PROGRAM RECORD KEEPING IN VOCATIONAL AGRICULTURE

Informed Consent of Participants

I voluntarily agree to participate in this survey on Supervised Occupational Experience program record keeping in vocational agriculture which is being conducted by the Department of Agriculture Education, Iowa State University.

I understand that the purpose of the research is to develop and improve vocational agriculture education, and that my only responsibility is to complete this survey form. I further understand that the information which I provide will be held in confidence, and that my responses will be combined with other responses and reported only in group summary form.

_____ _____

(Date) (Signature of Participant)

PART I

Directions: Please answer each question. Where a line is provided, write in your response. Where there are parentheses ( ), mark an "X" by the response which best describes your situation.

A. How many semesters of high school vocational agriculture did you complete?

_____

B. Approximately how many hours per month classtime did the instructor allot for instruction and work on SOE records?_____

C. What type(s) of SOE records were you expected to keep? (check all that apply):

1. ( ) income/expense records
2. ( ) improvement project records
3. ( ) supplementary practices (agricultural skills)
4. ( ) budget for each productive enterprise
5. ( ) monthly plans for each productive enterprise
6. ( ) goals for each productive enterprise
7. ( ) employment experience records
8. ( ) none
9. ( ) other (describe)_____

D. How many SOE visits did your instructor make per year to your home and/or place of employment?_____

E. How were the vocational agriculture course offerings structured?

1. ( ) Vo Ag I, Vo Ag II, Vo Ag III, Vo Ag IV
2. ( ) semester courses
3. ( ) combination of year long and semester courses
4. ( ) other (describe)_____

F. Which of the following Supervised Occupational Experiences did you have? (check all that apply).

1. ( ) raising animals and/or crops at home
2. ( ) working on a farm
3. ( ) working in an off-farm agricultural business
4. ( ) working with projects carried out using school land, greenhouse, shop, or other facilities
5. ( ) interviewing and observing people working in agriculture
6. ( ) other (describe)_____

G. For which of the following did you keep SOE records? (check all that apply).

1. ( ) raising animals and/or crops at home
2. ( ) working on a farm
3. ( ) working in an off-farm agricultural business
4. ( ) working with projects carried out using school land, greenhouse, shop, or other facilities
5. ( ) interviewing and observing people working in agriculture
6. ( ) other (describe)_____

H. Which of the following SOE experiences did you consider to be of the <u>most</u> value to you? (check only one).

1. ( ) raising animals and/or crops at home
2. ( ) working on a farm
3. ( ) working in an off-farm agricultural business
4. ( ) working with projects carried out using school land, greenhouse, shop, or other facilities
5. ( ) interviewing and observing people working in agriculture
6. ( ) other (describe)

I. Where did you live while attending high school?

1. ( ) on a farm
2. ( ) in a rural area, but not on a farm
3. ( ) in a town or city

J. Is your father a former high school vocational agricultural student?

1. ( ) yes
2. ( ) no

K. What was your highest FFA degree attained?

1. ( ) No degree
2. ( ) Greenhand degree
3. ( ) Chapter Farmer degree
4. ( ) State Farmer degree
5. ( ) American Farmer degree
6. ( ) Not in FFA

L. What was your financial net worth at the time of your graduation from high school?

1. ( ) less than $1000
2. ( ) $1001-3000
3. ( ) $3001-5000
4. ( ) $5001-7000
5. ( ) $7001-9000
6. ( ) $9001-11,000
7. ( ) $11,001-13,000
8. ( ) $13,001-15,000
9. ( ) greater than $15,000

M. What is your present student classification?

1. ( ) Freshman
2. ( ) Sophomore
3. ( ) Junior
4. ( ) Senior

N. Have you completed Agricultural Education 317A?

1. ( ) Yes
2. ( ) No
3. ( ) Currently enrolled

O. Have you completed Economics 230 and/or Ind. Ad. 384?

1. ( ) Yes
2. ( ) No
3. ( ) Currently enrolled

P. What occupation do you plan to enter upon completion of your formal education?_____

PART II

Directions: Each of the following items indicates an ability which you may or may not possess. Respond to each item in terms of how important you think your Supervised Occupational Experience (SOE) program record keeping in vocational agriculture was in developing each ability. If you feel your SOE program record keeping was of utmost importance in developing the ability, write "11" on the line in front of the item. If you feel your SOE program record keeping was of no importance, write "1" on the line. Use any number between 1 and 11 to indicate how important your SOE program record keeping was in developing each ability. Please respond to each item.

When responding to the items below, please use the following scale:

1	2	3	4	5	6	7	8	9	10	11
no importance					average importance					utmost importance

Importance of my Supervised Occupational Experience Program record keeing in developing my ability to:

_____1. Appreciate the value of records
_____2. Cultivate initiative in record keeping
_____3. Maintain accurate records
_____4. Keep neat records
_____5. Keep useful records
_____6. Maintain up-to-date records
_____7. Meet Vo Ag teacher's requirement
_____8. Pass the Vo Ag course
_____9. Attain a higher FFA degree
____10. Earn a proficiency award
____11. Make management decisions
____12. Budget for productive enterprises
____13. Set efficiency goals

___14. Improve my SOE program
___15. Set goals for productive enterprises
___16. Plan improvement projects
___17. Select agricultural skills to develop
___18. Prepare business agreements
___19. Analyze livestock production costs
___20. Analyze crop production costs
___21. Record off-farm employment experiences
___22. Compare goals and actual results
___23. Measure overall SOE program success
___24. Determine profit or loss
___25. Obtain credit
___26. Calculate depreciation
___27. Calculate income tax

NOTE: Thank you for your help by completing this survey. Please fold, tape, or staple closed and return by mail or return in person to 223 Curtiss Hall.

APPENDIX B. COVER LETTERS FOR QUESTIONNAIRE

Iowa State University of Science and Technology Ames, Iowa 50011

Department of Agricultural Education
223 Curtiss Hall
Telephone 515-294-5872

January 20, 1978

We understand that you are currently an Agricultural Education major at Iowa State University and that you are a former vocational agriculture student. Therefore, we are asking you to participate in a survey to help develop and improve the record keeping aspect of the supervised occupational experience programs for students in vocational agriculture. Will you please help by completing the enclosed survey?

Supervised occupational experience (SOE) may be defined as a vocational agriculture students' planned participation in one or more agricultural occupations. Record keeping is a product of the student's overall SOE program. There are several kinds of SOE records. Included are income and expense records, budgeting and goal setting records, written month by month plans, SOE business agreement records, plus others.

Please read the informed consent statement at the beginning of the survey and sign your name. You may call 515-294-8453 or 294-5872 if you have questions concerning your participation in the survey.

Please complete the survey carefully and honestly, following the directions for each part. The completed survey can be folded and 1) returned by mail, or 2) returned in person to Room 223, Curtiss Hall.

Thank you for your help to further develop and improve the record keeping phase of the SOE program.

Sincerely,

David L. Williams
Associate Professor

Duane L. Davis
Graduate Student

Enclosure

Iowa State University of Science and Technology Ames, Iowa 50011

Department of Agricultural Education
223 Curtiss Hall
Telephone 515-294-5872

February 6, 1978

As of this date, we have not received a response from you on the survey we sent you about two weeks ago regarding supervised occupational experience program record keeping in vocational agriculture. Since you were randomly selected from all Agricultural Education majors at Iowa State University, your participation is again requested.

To insure your participation in this activity to develop and improve the record keeping which many students get through vocational agriculture, we are enclosing another copy of the survey. Please complete it today following the directions for each part. The completed survey can be folded and returned by mail or returned in person to Room 223, Curtiss Hall.

Supervised Occupational Experience (SOE) may be defined as a vocational agriculture student's planned participation in one or more agricultural occupations. Record keeping is a product of the student's overall SOE program. There are several kinds of SOE records. Included are income and expense records, budgeting and goal setting records, written month by month plans, SOE business agreement records, plus others.

Please read the informed consent statement at the beginning of the survey and sign your name. You may call 515-294-8453 or 294-5872 if you have questions concerning your participation in the survey.

Thank you for your help to further develop and improve the record keeping phase of the SOE program.

Sincerely,

Duane L. Davis
Graduate Student

David L. Williams
Associate Professor

Iowa State University of Science and Technology Ames, Iowa 50011

Department of Agricultural Education
223 Curtiss Hall
Telephone 515-294-5872

February 16, 1978

Will you please take ten minutes of your time to fill out the enclosed survey and help improve the record keeping phase of SOE programs? Supervised occupational experience (SOE) may be defined as a vocational agriculture student's planned participation in one or more agricultural occupations. Record keeping is a product of the student's overall SOE program. There are several kinds of SOE records including income and expense records, budgeting and goal setting records, written month by month plans, SOE business agreement records plus others.

Please read the informed consent statement at the beginning of the survey and sign your name. You may call 515-294-8453 or 515-294-5872 if you have questions concerning your participation in the survey.

Please make your contribution by filling out the enclosed survey today. The completed survey can be folded and returned by mail or returned in person to Room 223 Curtiss Hall. Your help is very much appreciated.

Sincerely,

Duane L. Davis
Graduate Student

David L. Williams
Associate Professor

Enclosure